February · 1945

Vol. 2 No. 2

LONDON GUARANTEE BUILDING
Michigan Avenue at Wacker Drive

The Home of

finish

Monthly Trade Publication

Published by

DANA CHASE PUBLICATIONS

Address

360 North Michigan Avenue
Chicago 1

Telephone.....Central 1229

The only independently published trade publication devoted exclusively to Porcelain Enameling and Ceramic Finishing.

Editorial content includes Technical Information, Plant and Processing Articles, Educational Features, and complete Industry News coverage, both editorially and pictorially.

Free-controlled Circulation to those intimately connected with the Ceramic Finishing Industry.

To Others —

Subscription Price...$3.00 per year
Foreign Subscription Price (U.S. Funds) $5.00 per year

Copyright 1945 by Dana Chase Publications

Printed in U.S.A.

Page

PORCELAIN ENAMEL GOES TO SEA.....by Elsa Gidlow 11

HOW WARTIME PRODUCTS KEPT AN ENAMELING PLANT IN OPERATION.....by W. R. Wainscott 15

THE RELATION OF TEST METHODS TO QUALITY STANDARDS FOR PRODUCTION.....by A. I. Andrews 18

THE HOW AND WHY OF SIGN ADVERTISING— PART XI — CONCLUSION.....by Ken M. Davee 21

WHAT ABOUT 1945?.....by Frank S. Whiting 28

FEATURES

THE FINISH LINE — EDITORIAL..... 9

PHOTO SECTION

Part I — Porcelain Enamel Institute Meeting..... 25
Part II — Stove Industry Meeting..... 26
Part III — Furniture and Housewares Shows..... 27

CERAMIC FINISH NEWS

FURNITURE AND HOUSEHOLD EQUIPMENT BUYERS CROWD CHICAGO FOR NEWS OF 1945
Furniture Market and Housewares Shows..... 24

1900 EXECUTIVE TO HEAD WASHER AND IRONER GROUP FOR 1945.... 31

INDUSTRY NEWS AND PERSONALS..... 35

P.E.I. FORUM COMMITTEE OUTLINES PLANS FOR NEXT MEETING..... 40

NEWS FROM WASHINGTON..... 43

CHICAGO DISTRICT ENAMELERS CLUB TO MEET FEBRUARY 10..... 48

MISCELLANEOUS

DOES PORCELAIN ENAMEL NEED A NEW NAME?..... 32

COULD THIS BE THE ANSWER TO THE ENAMELERS PRAYER..... 41

INDUSTRIAL PUBLICATIONS..... 45

ADVERTISERS' INDEX..... 52

finish

ceramic finishes on metal

GOOD MERCHANDISING
includes
GOOD PACKING

WOODEN BOXES AND CRATES—ALL KINDS

Plywood • Wirebound • Hinge Corner • Nailed Crates • Wood-Steel • Nailed Wood • Shop and Tote Boxes

★ Consult with our packing engineers. We offer you the services of our designing and testing laboratory without obligation.

CHICAGO MILL AND LUMBER COMPANY

111 W. Washington Street Chicago 2, Illinois

Pioneers for Over 60 Years

Plants at: Helena, Ark. • Greenville, Miss. • Tallulah, La. • Chicago, Ill. • Plymouth, N. C.

THE Finish Line

THE LIGHTING FIELD has always been an important outlet for porcelain enamel as a reflector finish for Mazda lighting, and as a finish for fluorescent reflectors before the war curtailed production. With its high diffuse reflectance, freedom from upkeep and immunity to color change, porcelain enamel has offered qualities for lighting reflectors that have not as yet been met by competing materials.

But, competing materials have, on occasion, done a better selling job and, as a result, made definite inroads on this business.

What are the facts?

Just prior to the war bright metals were making a strong bid for the reflector business for Mazda lighting — particularly indirect lighting. Claims of high initial reflectance and design adaptability won a strong following in a comparatively short time.

Here's a case in point:

A few years ago a large manufacturing plant installed indirect lighting with bright metal reflectors in both its private and general offices. Requirements for adequate illumination were met at the time of installation.

Six months later

After only six months of use, office employees complained of inadequate lighting. It was found necessary to replace many of the 300 Watt lamps with 500 Watt lamps. (In addition to higher lighting cost, heat was a factor as offices were air conditioned.)

At the end of a year complaints were again heard, and a practical check of lighting conditions was made. Typical private offices were repainted, reflectors were cleaned in accordance with recommended methods and new lamps were installed. *Light meter readings at desk height showed a loss of 50 per cent from readings taken at the time of installation.*

The eventual result was the replacement of the office fixtures with fluorescent lighting, even though the original high priced fixtures had been in use less than five years at the time of replacement.

Other competition

At the present time some manufacturers are offering fluorescent reflectors with organic finishes said by some to be "just as good" and by others to be "superior" to porcelain enamel.

Call it high pressure selling — call it what we like — when products, which lack many of the qualities important for the job, are sold successfully in competition with porcelain enamel, the fact remains that it is up to our industry to prove the inherent qualities of our material or lose valuable business that should never be lost.

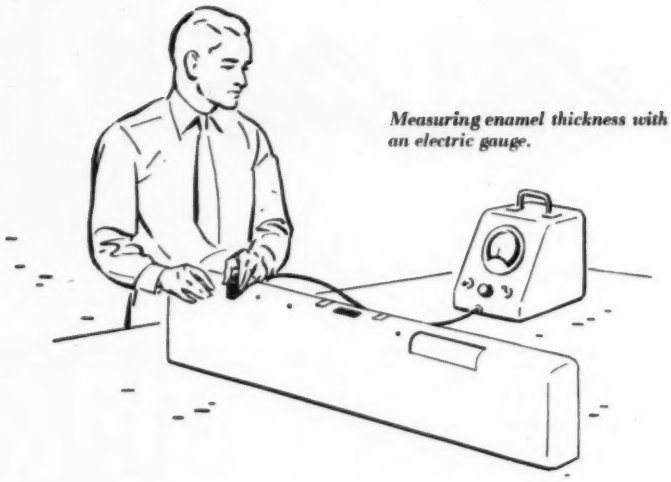
Dana Chase

Editor and Publisher

Engineering opinion, based on experience

(Quoting from an article by Frank Clayton, plant engineer, Consolidated Vultee Aircraft Corp., Ft. Worth, Texas, and F. N. Straus, project mechanical engineer, The Austin Company, Ft. Worth. — June, 1944 Finish)

"Our experience with both rectified fluorescent lighting used in manufacturing areas, and the flush troffer lighting used in office areas is that these are the best systems for their respective uses in existence today. In both cases, porcelain enamel reflectors are utilized in the form of individual units in the factory and as continuous troughs with louvres, also of porcelain enameled steel, in the offices. When the permanence of finish and cost of maintenance are considered, it is our opinion that porcelain enamel on steel is the best reflector material for all types of fluorescent lights."



Measuring enamel thickness with an electric gauge.

TI-NAMEL

Another New Creation by Inland Steel Company's Research Laboratories

The long awaited porcelain enameling base, which eliminates the necessity for a ground coat, is here! It is Ti-Namel, the new titanium alloy steel—the newest creation by Inland's research laboratories.

Ti-Namel is superior in every respect to older types of base metals. Its drawing properties are equal to the best deep-drawing steels. It does not age strain no matter how long it remains in storage before fabrication. Inland Ti-Namel Steel does not reboil. Therefore vitreous enamel finishes, equal to the best multi-coat ware, are obtained with white or color coat enamels applied direct to the base metal. This results in a thinner coat which reduces chipping hazards and increases the service-life of the ware.

Ti-Namel reduces reoperations, edging, and scrap. It is fired at lower temperatures, and in less time. In short, Inland Ti-Namel Steel increases shop output, lowers manufacturing cost, and assures superior vitreous enameled ware.

Pending patent applications on the new enameling process and product made thereby, are owned jointly by Inland Steel Company and The Titanium Alloy Manufacturing Company under trust agreement.

Write for copy of the Ti-Namel Bulletin and licensing agreement. Inland Steel Company, 38 South Dearborn Street, Chicago 3, Illinois. Sales Offices: Cincinnati, Detroit, Kansas City, Milwaukee, New York, St. Louis, St. Paul.

INLAND STEEL

Porcelain enamel goes to sea

ceramic coated bulkheads make U. S. Hospital Ship "Marigold" safer, cleaner

By Elsa Gidlow • SAN FRANCISCO CORRESPONDENT

Exclusive feature finish

If some visionary in the porcelain enamel industry had predicted a few years ago that any form of enameled metal would assume an important role in ocean-going vessels it is more than likely that he would have been greeted with hoots and jeers, or at least with mild indulgence. But an almost accidental discovery has given this material sea legs and the prospect of vast additional adaptation to maritime uses. It may solve some of the most bothersome of corrosion problems that now force frequent replacement of certain equipment in sea-going ships.

The corrosive effects of salt air and salt water as well as the disintegrating action of certain minute organisms present in ocean water, particularly in tropic latitudes, have always been a headache to maritime engineers. "Tropicalizing" is a word that has come into current use to describe the application of a protective coating as protection against air-borne fungi and spore growth. Some of their problems may be on the way to solution through the use of a new sea-going porcelain enamel that was used in the construction of the U. S. Hospital Ship "Marigold" (originally known as the "President Fillmore").

Some of the more startling uses to which sea-going enameled steel may be put are still experimental or else subject to military secrecy, but the job that can be talked about is dramatic enough; and it is also considered to be the largest single installation of enameled metal in existence and undeniably one of the most interesting applications of the material—or any type of ceramic finish — yet made.

First ship to have ceramic coated bulkheads

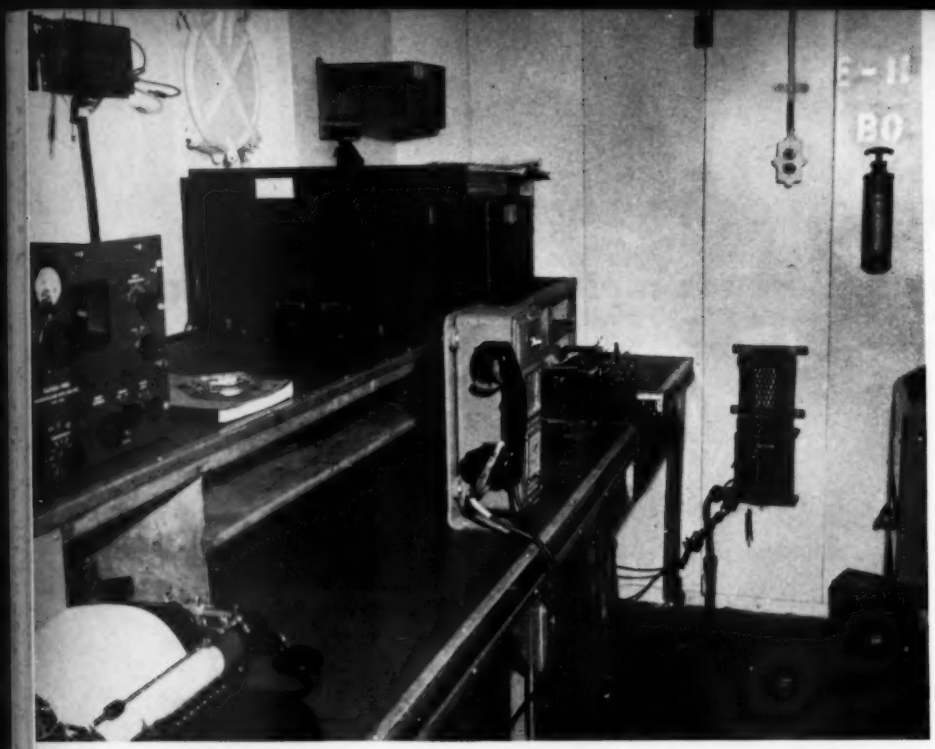
The U. S. Hospital Ship "Marigold" is the first large hospital vessel afloat to have non-structural bulkheads of ceramic coated steel. The particular material used is a new development called "Seaporcel," which is a name coined from "porcelain for the sea." It was evolved by Porcelain Metals, Inc., of Long Island City, N.Y., who have since renamed their company Seaporcel Porcelain Metals, Inc., with the intention of eventually dropping the second part of the firm designation and calling themselves Seaporcel Inc.

Before describing the "Marigold" installation, let us examine this "porcelain for the sea." It was an accidental discovery that emerged while the company was trying to perfect a certain type of matte finish porcelain on metal for U. S. Maritime Commission use. Its potentialities were quickly realized, intensive experimentation resulted in a rapid development of the new material, and both experimentation and further development continue.

Early in the war the company had become interested in producing a suitable fireproof steel coating specialized for shipboard use. Now, they believed, they were on the right track, for the finish they had developed, when applied to light gauge metal sheets, could be drilled and cut with hardly any damage to the coating. It also could be welded to uncoated steel with slight damage. It was found to successfully meet severe thermal and flexure tests. It is a very tenacious finish, showing excellent adherence under all accepted testing methods. Even under harsh percussion it shows no shattering and little appreciable breakage. It can be cut with an acetylene gas torch, can be drilled very easily, can be hacksawed or cut on a squaring shears — all with a minimum of breakage. Over an extremely light ground or bond coat, the finish is applied in either full matte or semi-gloss textures for the elimination of highlights, sometimes as a single cover coat—sometimes in multiple coatings, depending upon colors or other requirements — the coating ranging from as low as .008 inch up to .012 inch. It is of particular value in resisting thermal shock, has high heat resistance and is invaluable in the retardation of flame propagation throughout a ship's compartments.

Converting passenger liners to hospital ships

These points were of special interest to the U. S. Surgeon General's Office and the Army Transport Service because of their concern with converting passenger liners to Army Hospital Ships. In this connection they were engaged with problems involved in the design of the non-structural joiner bulkheads, or interior wall surfaces of the vessels. First and foremost, a fireproof material was required. One need only recollect the dreadful Morro Castle disaster to realize the importance of this factor on shipboard at any time or review the dramatic story of the burning of the U.S. Manhattan as



Radio room on the U. S. A. H. S. "Marigold." The fact that bulkhead panels were insulated and a 1⅜" air space allowed, would tend to provide sound insulation as well as thermal insulation.

presented in "Readers Digest". During wartime the destructive and terrible fires at sea make this requirement of infinitely greater importance, above all on a hospital ship.

In addition to fireproof qualities, cleanliness takes on prime importance, again more particularly on a hospital ship than on other vessels at sea. For a hospital ship, cleanliness — sanitary cleanliness—means not only that it must be clean when put into service, but that it must be comparatively easy to keep it immaculate and, if possible, surgically clean all during its operation. Sound deadening and heat insulation were two more requirements.

With bulkheads of the type described in this article, operating rooms may easily be kept clean and sanitary. The light reflecting properties should also be helpful in affording uniform general illumination.

Ceramic finish meets variety of shipboard requirements

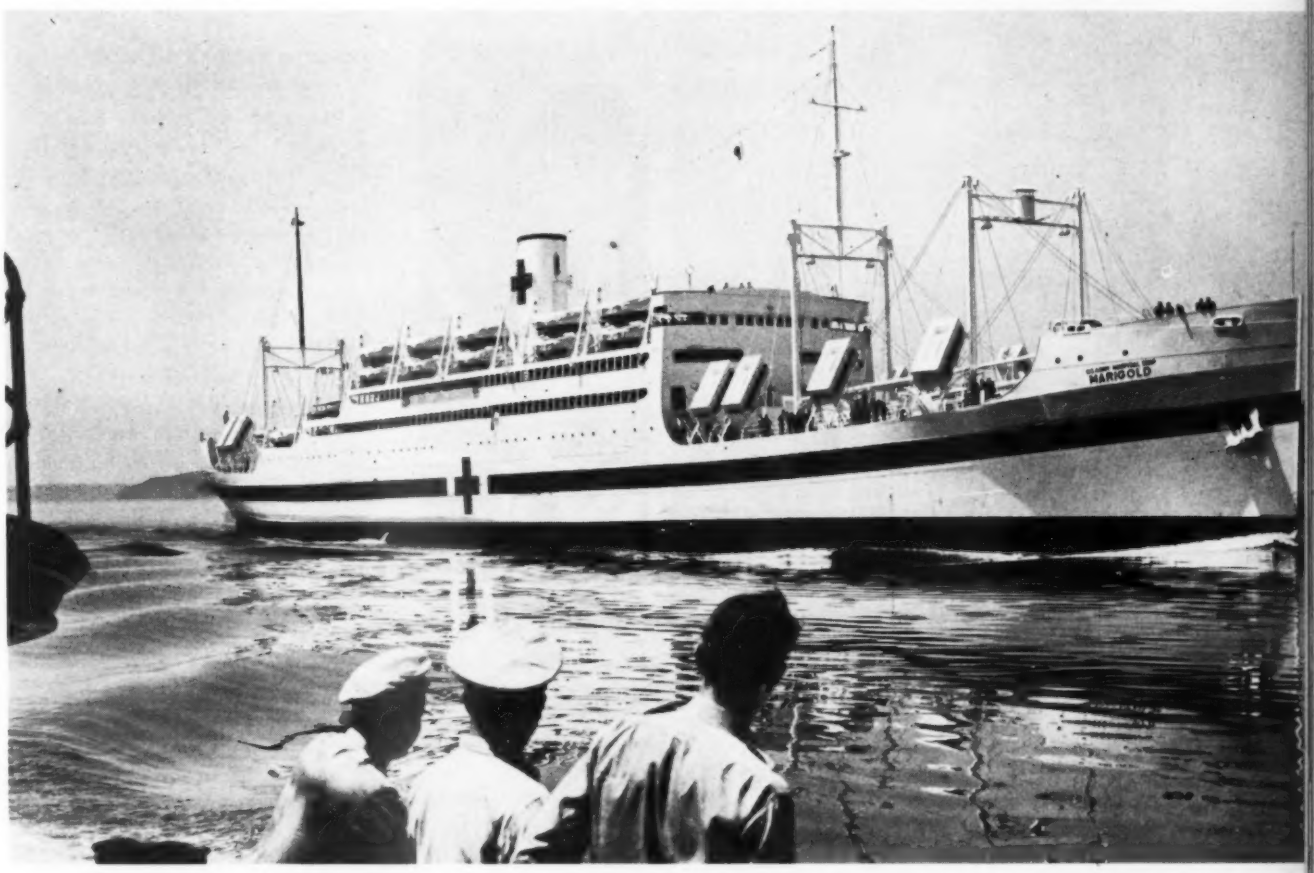
On first thought a ceramic type coating might hardly recommend itself as meeting the needs of the Army and of the U. S. Surgeon General's Office. Actually, it turned out, the Navy found just what it was looking for in this new "porcelain for the sea." Everyone familiar with the exacting nature of Navy specifications will understand that this material was not accepted and used without the most comprehensive and careful testing. This ceramic finish meets the specifications and has been used not only for the divisional bulkheads on board the "Marigold." One of its chief additional uses is in sanitary ware. Without going into detail, it may be admitted that this new material is steadily replacing galvanized sanitary ware aboard hundreds of U. S. ships, and is gradually being tested for and extended to a number of other highly important uses on vessels — uses that are not to be publicized at present for military reasons. Certain equipment that deteriorated within two months in southern seas, experimentally replaced by the same equipment made out of the new ceramic coated metal, have already withstood two years of exposure to use.

Largest single installation of ceramic coated metal

A total of 136,000 square feet of the material was used on the "Marigold," in divisional bulkheads, ships officers and crews quarters, medical offices, attendants offices, hospital and operating rooms, patients quarters and wards. This includes ceilings and linings against the hull of the ship. Along with the porcelain material, the installation also called for 18,900 feet of millboard and 33,000 feet of glass fibre insulation.

The divisional bulkheads, which utilized some 82,000 square feet of material, were constructed of two sheets of 24 gauge ceramic coated metal. The surfaces were first coated with a ground or bond coat as protection from rust and corrosion, and

the face surfaces only finished with a coating in colors to meet specified requirements. Colors used in the various locations were cream, green, off-white, and (in dark rooms) dull black. The bulkhead panels were backed with 3/16" asbestos millboard insulation. The glass fibre insulation was used behind the panels in rooms, offices, etc., facing the ship's outer shell to aid in protection from moisture.



ALL PHOTOS FOR THIS ARTICLE BY SIGNAL CORPS, U. S. ARMY

The "Marigold," largest U.S. Hospital Ship, was the first to have non-structural bulkheads of ceramic coated steel. It is also said to be the largest single installation of ceramic coated metal for any purpose. A total of 136,000 square feet of "Seaporcel" (porcelain for the sea) was used in divisional bulkheads, ships officers and crews quarters, medical offices, attendants' offices, hospital and operating rooms, patients' quarters and wards. The fact that ceramic coatings of this type are fireproof, sanitary, corrosion-proof, and also meet the specification requirements for non-structural bulkheads, made possible its choice for this important ship.

Installation details

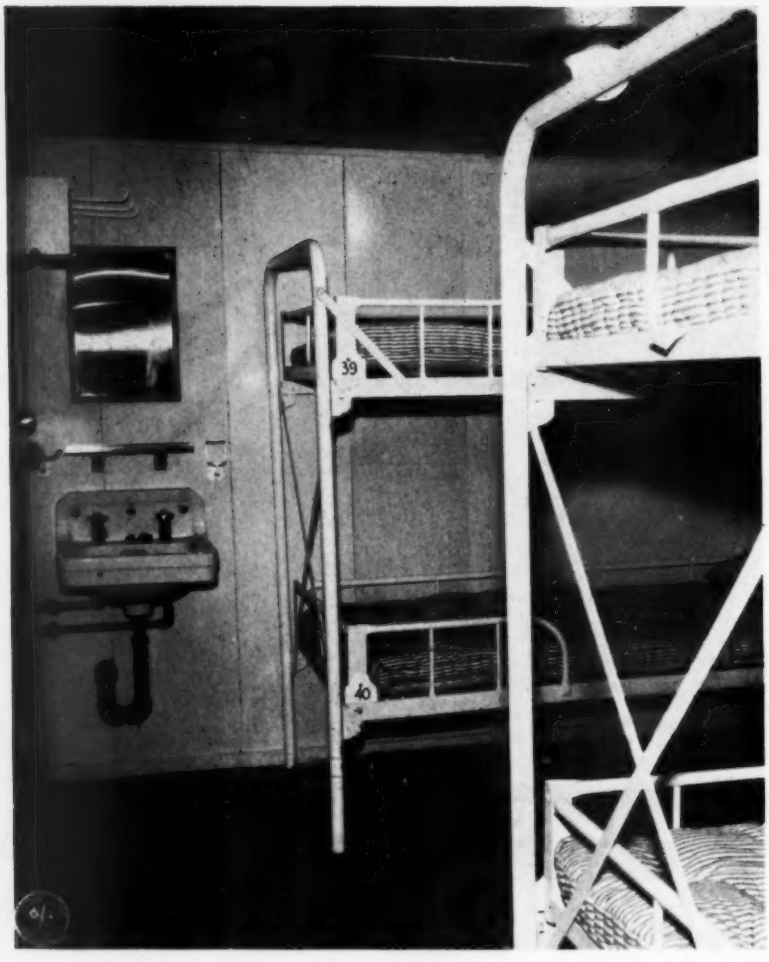
Ease of installation is a feature of the panels. These have vertical panel joints spaced 16" on centers, with 24 gauge galvaneal vertical snap-stiffeners spaced every 8" to strengthen the bulkheads. Panels were set back to back, allowing 1⅜" air space between panels for additional insulation value. The panels were snapped into vertical stiffeners and held in place by small button projections on the panel flanges making the complete unit flushfaced. All panels were held top and bottom into 16 gauge galvaneal runners previously welded to deck and deckhead. A simple base and cornice channel member of 20 gauge metal, ceramic coated, was applied for finish.

Sheets with flanges on the vertical sides were cut on shipboard to meet camber and shear of the ship, and to accommodate sanitary, electrical and ventilation piping.

All bulkheads around dark rooms and X-ray rooms were constructed similarly only in dull black color and, in the X-ray rooms, with a lining of lead laminated to the backs of each panel to prevent the rays from escaping.

Another 19,000 square feet of the material went into the ceilings or deckheads, which were handled in a manner similar to the divisional bulkheads except that only one panel was used as a facing for the steel deckhead. Also of only one-panel thickness were the linings against the hull of the ship, running to 35,000 square feet. Between the panels and the hull glass fibre insulation was used.

To increase rigidity of the panels as an extra precaution in wards where neuropsychiatrics were to be housed,



To increase the rigidity of the panels in wards where neuropsychiatrics are housed, the ceramic coated divisional bulkheads were reenforced with vertical stiffeners spaced at 4" intervals. No bolts or screws are employed.

divisional bulkheads were re-enforced with vertical stiffeners spaced at 4" intervals. Asbestos millboard was inserted between the panels for all the bulkhead work. No bolts, screws, or drilling and tapping were anywhere employed.

Because of the nature of shipboard construction, and the necessity of alternating or co-ordinating work with other contractors engaged on the job, it is difficult if not impossible to give a fair idea of the amount of time taken in the installation, but it was "turned out quickly and completed in specified time." The "Marigold" is the services' largest hospital ship.

The ceramic coated joiner bulkheads were furnished by Seaporcel Porcelain Metals to Seaporcel Pacific, and installed at the Tacoma Plant of Todd Shipyards, Inc., under the supervision of John Green, then superintendent of outfitting, now works manager. Cooperating in the installation was Seaporcel's representative on the West Coast.

Porcelain Metals, Inc., of Long Island City, N.Y. started operations in 1931. Originally a "jobbing" plant for porcelain enameling, they early began to specialize in architectural work. When the war came, architectural porcelain enamel installations constituted their main business. They claim the first architectural department headed by a registered architect, the first architectural folder literature in the industry and, they believe, the first porcelain enamel company to put on an architectural exhibit. This exhibit is in the Architect's Sample Bureau in New York City. When war started they intensified these researches and their success in developing a "porcelain for the sea" capable of adaptation to a variety of naval uses has been instrumental in keeping them operating in the porcelain enamel field. They are one of the few firms to continue operations in their own field during the war.

Expect expanding use of ceramic coatings on shipboard

Discussing the current as well as the future use of the new material, M. J. Saltzman, company president, said, "I feel that there is a definite place in the maritime field for ceramic coating. As good as it is, we do not think it is as good as it is going to be. I am willing to predict that it will be used throughout a ship because of its anti-corrosion qualities."

Considering the horror of fire at sea and the extent to which successive coatings of paint up to as much as a quarter inch may intensify this hazard, there seems little doubt that a suitable substitute for painted materials will be welcomed as a boon by shipbuilders. Inorganic materials such as those used on the "Marigold" (steel, ceramic coating, asbestos millboard and glass insulation) have, by this installation on the largest U. S. hospital ship, been recognized as a step in the direction of greater safety. Mr. Saltzman believes there will be more important steps in the future which may make later developments in porcelain for shipboard use a must in the construction of ocean-going ships and perhaps all ships, since all ships have corrosion problems, cleanliness problems and the hazard of fire.

This is one of a series of articles which Finish is publishing on new markets for ceramic finishes. Several have featured architectural porclain. In January we presented the porcelain enameled "chimney." This article by Elsa Gidlow should enable enamelers to further visualize fields for ceramic finishes that are as yet untouched.

How wartime products

kept an enameling plant in operation

By C. R. Wainscott · GENERAL PLANT SUPERINTENDENT, INGRAM-RICHARDSON MANUFACTURING COMPANY OF INDIANA, INC., FRANKFORT, INDIANA

finish

During the present war period a large number of enameling plants were forced to cease enameling operations due to government restrictions and curtailment of materials, but our plant was fortunate in obtaining war contracts in such large volume that our enameling department has been able to operate without many interruptions since Pearl Harbor.

Plant designed for quantity production

One main fact which helped us procure these large war product enameling contracts was that our enameling department had been laid out at its inception twenty-eight years ago as a production shop. Since 1916 we have installed two continuous furnaces, with a third one in the initial stages of construction at the present time; some automatic spraying equipment has been placed in service throughout the plant; and we have conveyorized a good portion of the plant. All these improvements help to make our shop a modern enameling plant — a plant large enough and modern enough to successfully handle war products on a volume basis.

Getting back to the main theme, along came the war and from all appearances porcelain enamel would play a very small part in important war production. We wanted to keep our enameling department in operation during the war if it could be done through the production of some items that were necessary in the war picture. We carefully studied every possibility, and as a result were successful in finding items in connection with which porcelain enamel could play an important part.

The products themselves made strange bedfellows as they moved along the production lines, as will be seen in our brief description following.

Six million tubes for fire extinguishers

To start with, let us describe the product with the largest volume. We enameled, in ground coat, over six million interior and exterior steel tubes to be used in manufacturing pump type OCD fire extinguishers. Each raw tube was pickled to remove grease and scale in preparation for enameling. Next, the tubes were dipped in a special hard ground coat enamel, the specific gravity of which was between 162 to 164 grams per 100 c.c. sample. The dip weight of the enamel was approximately 1.35 oz. per square foot dry.

Before fusing, great care had to be taken to eliminate the enamel beading at the ends of the tubes, since the interior tube fits into the exterior tube in actual use. Also, spot spraying was necessary to cover certain parts after dipping. Further, close tolerances in thickness of the enamel had to be maintained on both the inside and outside of each tube. After being carefully inspected, the interior tubes were placed inside the exterior tubes and put into special crates for shipment. It might be added that many of the finished fire extinguishers eventually found their way into Lend-Lease and army camps throughout the country.

Screen process instruction plates

Another contract, which resulted in a large volume, was for shields and instruction plates for army field ranges. The shields followed almost the same production steps as did the fire extinguisher tubes previously mentioned. The instruction plates, after being pickled and enameled in ground coat, were transported to our screening department where the correct maintenance and procedure instructions were screened on the surface of each.

This screening process involved the use of a copper wire mesh screen with all of the screen blocked out with special "sizing" except the actual wording which was to be transferred to the enamel surface. White screening paste made from an oil base was placed on the surface of the screen and worked through the screen by the squeegee process. Great care was necessitated to keep the screen clean, since the openings in the screen were between 180 to 200 mesh and clogged easily. Under normal conditions an operator could screen several hundred plates in an eight-hour work day.

Enameled flues for defense housing

An outgrowth from our peacetime fabricating and enameling is the porcelain enameled flue pipe and roof fittings which have been used extensively in defense housing and army

C. R. Wainscott

The photos on this page and the third column of page 17 show some of the steps in the production of porcelain enameled "flues."

Above: Rolling the flue pipe.

Right: Spot welding the seam.

Left: Seam welding for perfect seal.

Right: Using air hammer on seam.

camps throughout the country. After diversified fabricating steps in our metal fabricating department, the pipe and roof fittings are pickled and dipped in ground coat enamel. Then they are carefully drained, to eliminate enamel beading on the edges and in the corners, and fused. To withstand harmful smoke fumes and the condensate prevalent in the average chimney, a uniform coat of acid resisting enamel is used as a cover coat.

Special furnace tooling is required for all the items to eliminate warpage and distortion common in enameling products of this nature. Although the manufacture of porcelain enameled chimney flues and roof fittings is now definitely considered war work, the future appears bright for these items in view of the anticipated building boom after the war.

Airplane exhaust shrouds — porcelain enameled

Still another war item of considerable quantity, produced in our enameling department, is the airplane exhaust shrouds used for eliminating the glow in exhaust systems on aircraft during night bombing attacks. These shroud parts are enameled in the regular army color — olive drab — using a special matte finish which successfully eliminates any reflectance caused by searchlights on the ground. Also, this porcelain enamel finish offers a very good resistance to harmful exhaust gases. A large number of these shrouds have followed the army air service throughout the world.

Since Pearl Harbor we have also applied porcelain enamel to thermos jug linings for the army air service, coffee urns for the army, railroad signal blades, and a number of other miscellaneous items.

If you walk into our plant now you might more nearly get the impression of normal operations insofar as the type of products is concerned. As some of the strictly war products, such as pump tubes, have tapered off in requirements, stoves and heaters and other essential peacetime products have been released to a certain degree.

Up to the time of Pearl Harbor the company had never employed women

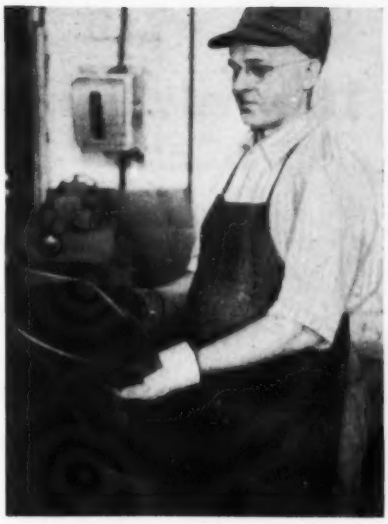
as workers in the plant proper. But, to offset the movement of our regular male employees into our essential war work, which we will briefly describe in the following paragraphs, it was necessary to employ women to fill the gap left in the enameling department.

Other war work

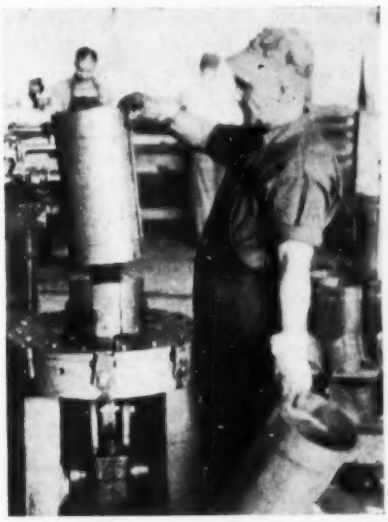
As was true in the majority of enameling plants, the production described was only a small part of our company's contribution to the war effort. One of our early jobs, and one in which we found our experience in enameling distinctly helpful, was the heat treating and fabricating of armor plate used as a protective covering on army half track vehicles. This new work necessitated the construction of three special heat treating furnaces, an intricate quenching system and increased handling facilities. One whole section of the enameling division was moved out with the exception of a continuous furnace which was used in a drawing operation in conjunction with heat treating.

The armor plate program terminated several months ago and these departments were immediately converted to the fabrication and assembly of airplane wing spars and turret decks for bombers of both the army and navy. This type of work necessitated a comprehensive training program for the supervisors and workers alike.

As stated previously, while porcelain enamel as a finish has not played a particularly outstanding part in war production — probably not as important a part as it should have — we were gratified to find that there were enough critical items to make the continued operation of our enameling department feasible. The entire enameling industry as a whole was gratified to learn that porcelain enamel could play a part in releasing critical materials such as copper, stainless steel, brass, nickel and others, and that as a result these essential metals were conserved for much needed use in the war program.



Above: Beading the weather cap.

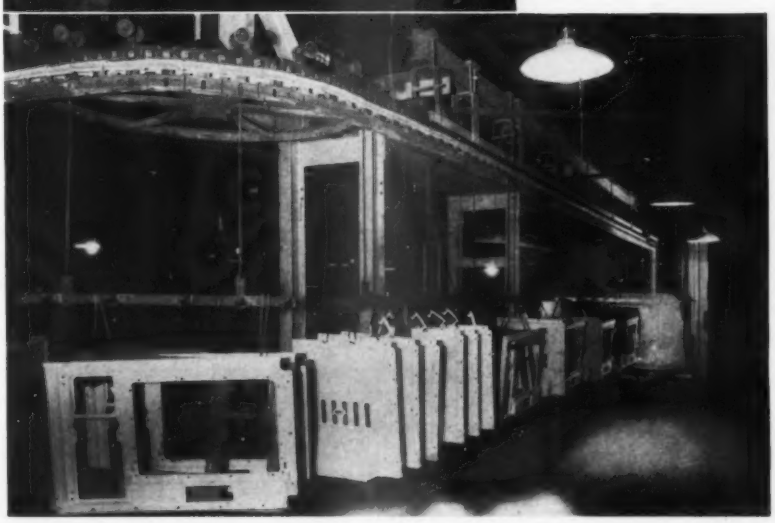


Above: Equipment for expanding pipe.

Below: Ground coat dipping.

Left: Applying lettering to instruction plates by screen process method.

Below: A pre-war photo showing the continuous furnace conveyor in the Ingram - Richardson plant.



The relation of test methods to quality standards for production

a story of results when technical knowledge and plant experience work together

By Professor A. I. Andrews · HEAD OF THE CERAMIC ENGINEERING DEPARTMENT UNIVERSITY OF ILLINOIS, URBANA, ILLINOIS

THE enameling industry, like most of our manufacturing industries, just grew. From small one- or two-man shops, plants were expanded until the market became large enough to support much larger production. Even then the new plants were patterned after the old ones. As continuous, straightline production developed in other industries, phases of it were adapted to enamel shops. The war greatly curtailed this development and many enameling plants were converted, partially or totally, to strictly war production.

As we look toward the end of the war, we must plan for a reconversion to peace-time production. The conversion to war production was undertaken under the pressure of a demand for products which had to be delivered regardless of cost, waste, or inefficiency. Today, we are considering a different problem in reconversion for, though there is a large market, many economic problems must be considered. Labor training, the selection of equipment, the design of the product, quality control and general efficiency of purchasing, management, production, and sales will all be important. Any one of these problems, if not properly handled, could lead to failure. Industry is faced with the most difficult job it has ever encountered and if it fails, government control is the only answer.

The consumer has found it necessary to purchase many substitute and inferior products during the war, but is looking forward to much better quality in the post-war period.

The enameling industry must be ready to produce these better quality products. Much has been written concerning the backlog of business and the large "immediate post-war" market. It is the period to follow this expected boom that will reflect the real buying trend, and the quality of products produced immediately following the war will have much to do with the trend insofar as the enameling industry is concerned.

To produce quality ware, it is necessary to first control the manufacturing operations; and, secondly, to control the product.

The complete subject of this article is "The Relation of Test Methods to Their Use in Establishing Quality Standards for Production." It can be conveniently divided into three divisions:

1. The test.
2. The application of the test.
3. The personnel.

Developing test methods

The development of test methods usually begins in a laboratory and should be undertaken or at least directed by one who has an appreciation of the practical limitations of a production test. Obviously, elaborate and delicate equipment can not be used outside of the laboratory and, if possible, it should be avoided.

A test method should be designed to incorporate insofar as possible the following characteristics:

Simplicity and convenience.

Simple, rugged equipment.

Dependable results, promptly obtained.

Ease of interpreting results.

It is not difficult to develop tests, but to meet these practical considerations is generally a real problem. The acceptance or rejection of a test is, however, usually dependent upon the degree to which they are met. Our enamel literature is full of test methods but only a very few of these tests are actually used, and where they are used they are generally modified. This prevents a test from becoming standard throughout the industry, and prevents coordination from one plant to another and the setting up of industry specifications such as the National Bureau of Standards or the ASTM Standards.

The Porcelain Enamel Institute has contributed much in the promotion and financing the development of tests, but this is only a preliminary part of the problem. There remains much work to be done on the collection of data. The greatest handicap which porcelain enamel faces in its adaptation to new products is the absence of reliable basic information concerning its properties. The architectural program for porcelain enamels sorely needs such data, specifications, and standard test methods. The government specifications, during the war, have made people specification conscious and even though we may dislike meeting them, the purchaser is very much interested.

Typical examples of test methods—both good and bad

The reflectometer and the electric thickness gage have contributed more to the improvement of enamels than any other test equipment ever developed for the enameler, yet the average enameler does not operate these tests according to specifications. Before these instruments came into use, very complicated methods and equipment were used by one or two laboratories. The tin oxides then used varied greatly and the use of opacifiers, in general, depended upon guess work

or the ability of the salesman to convince the shop man that he knew what he was recommending. Commercial frits varied greatly and plant frits even more so, but no one knew the difference. It was a case of merely guessing and blundering merrily along.

Many of the other properties of enamels are still in this situation. Surface hardness, one of the most important properties where porcelain enamels excel as compared to plastics, is seldom tested and very poorly understood. A surface hardness test has been developed, but it has not yet been extended to all types of enamels. Porcelain enamels vary in this property from excellent to very bad.

Gloss or uniformity of surface is not satisfactorily determined by any test method yet developed.

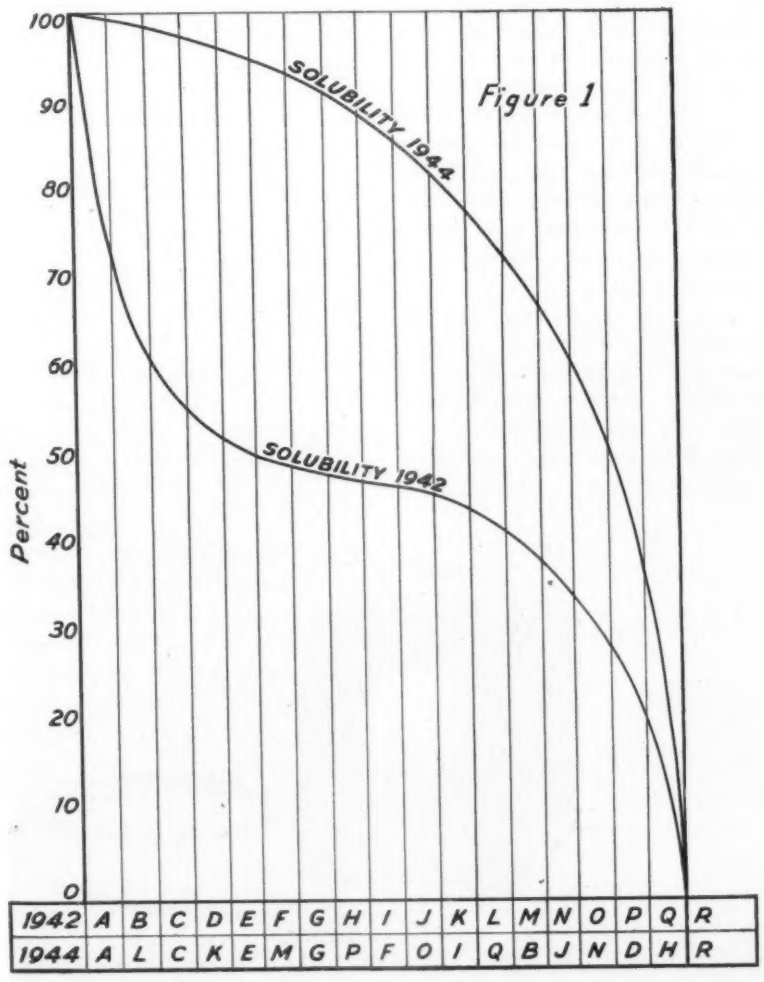
Reliable color determinations require elaborate equipment and, in plant control, depend upon the changeable eyes of the inspectors.

We have no satisfactory test for adherence, and know even less about what the results actually mean. The impact tests available can be run only on certain types of ware. The kitchen ware industry has a satisfactory test in which all impact tests are made on the bottom radius of pans. Impact tests on miscellaneous parts of ware give a wide range of values and sufficient work has not been done in their investigation.

The abrasion test is not used extensively but, since it does measure a very important property of porcelain enamels, it should be used, modified, or changed so that it *will* be used.

The acid solubility tests have been well standardized for both flat ware and kitchen ware. They are used extensively and are generally considered quite satisfactory.

This chart shows the improvement in the solubility of enamels of the cooperating firms in the kitchen ware industry over a two year period. Letters at the bottom of the chart represent the different ware produced by the various companies. The enameled ware receiving the highest value for solubility tests is rated 100 per cent; the lowest 0 per cent. Those between were rated proportionately.



A test development program must have executive backing

A development program must have the support of plant executives. The formation of an interested group of operating and technical men who are willing to *actually cooperate* in giving the test methods a thorough trial and offer suggestions for improvements is equally important. A control laboratory can then get results.

A good example of such a procedure which is actually showing results is that of the kitchen ware industry. A technical committee of six men from the interested plants acted as the advisory group in the preliminary development of three tests—the impact test, the solubility test and the thermal shock test. Tests were thereby developed and checked in a few plants. As soon as these were considered satisfactory, they were recommended to the whole industry.

Three successful tests now used by kitchen ware group

The first tests recommended did not prove to be entirely satisfactory. The tube on the falling ball impact test developed a rough interior and was redesigned. A standard two-quart pan, only, could be tested. By a series of changes these objections and faults were eliminated. The test has now been standard for about two years and the equipment is used in all of the cooperating plants. About once a year the production and technical representatives of all of the plants assemble and discuss the tests and make suggestions for the good of the project.

The solubility test first developed had a serious fault. It was not convenient to run, and although it was

One type of reflectometer which has been used extensively in the enameling industry. Many refinements have been made.

PHOTOS ON THIS PAGE COURTESY CHICAGO VITREOUS ENAMEL PRODUCT CO.

an improvement over the miscellaneous tests formerly used, it was not good enough to induce the plant men to adopt it. Recognizing this fault, a new test was developed which was simple enough for anyone to run and it soon met with favor. It has now been established in most of the plants.

The thermal shock test, which was important to the kitchen ware industry, also required drastic changes but, as a result of the combined efforts of the group, it is now established in all of the plants and is very satisfactory.

Improvement by evolution

Obviously, the period of test development covered several years, but during this time the industry became more and more quality minded. Comparable tests were first run on standard shaped pans and the enamels of the different companies were compared. In periodic reports from the laboratory, the executives received curves showing the quality of the ware of the whole industry. No company knew the identity of any of the results except its own, and the code was changed with every report. Figure 1 is typical of the industry data. The company receiving the highest value for impact, thermal shock, and solubility was rated 100 per cent, and the lowest was rated 0 per cent. Those between were rated proportionately. In the reports, curves were drawn for each property and at times, appearance, reflectance, color, and other properties were given a rough evaluation. A competition naturally developed and improvement was surprising. The tests were expanded to miscellaneous ware, and sometimes a manufacturer who had a pretty fair rating found himself in the group producing the poorest ware because others in the lower group had made substantial gains.

The results of these reports was the establishment of Commercial Standards with the National Bureau of Standards. These standards have now been once revised upward and are under consideration for a second revision upward.

This story shows what can be done in an industry where real cooperation and confidence is placed in a well organized group. The Porcelain Enamel Institute has a much more diversified group of manufacturers, but a program such as this brings out many valuable principles on design, enamel processing, enamel compositions, mill batches and control.

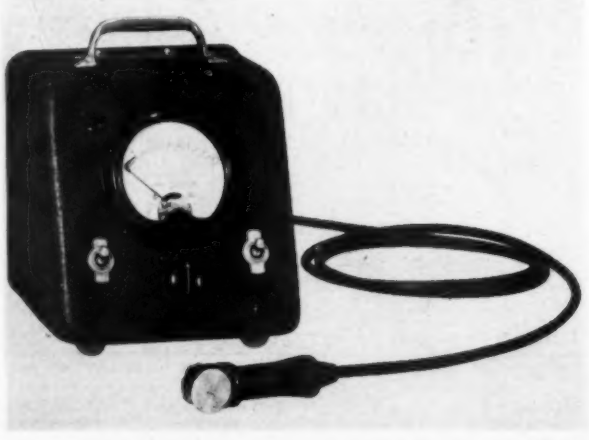
Don't forget the personnel problem

Although the development of the test and the application of the test cover a large part of my topic, there still remains a very important consideration — and that is personnel.

You probably all know by this time that the Universities and Colleges have been unable to turn out any appreciable number of technically trained men for the industry over a period of about three or four years. Enrollments of men students are down to an all-time low. If new students enroll next September, it will be four years before they can be given a training as good as that which they received before the war. If we allow two more years for the war, which is a reasonable guess, then our country will be short about ten years' supply of graduates. That is a serious situation. Since many of the educators have also entered industry, the faculties will be new and will not be as efficient as they were before the war.

To be sure, men are coming back from service and one may say they will receive refresher, accelerated courses but there are many who do

to Page 50 →



An electric thickness gauge for measuring thickness of enamel coatings.

The how and why
of sign advertising

By Ken M. Davee • DAVEE, KOEHNLEIN AND KEATING, CHICAGO, ILLINOIS

PART XI • Specialized sign uses • CONCLUSION

Exclusive feature finish

In Baltimore, according to traffic estimates, some fourteen million people see the Calvert electric sign on the Calvert Distillers Corporation warehouse in that city. It is located along the main highway to Washington. The automobile traffic on that highway to and from the Capitol totals nearly seven million cars a year. They carry an estimated fourteen million people. (Pre-war figures.)

Moreover, the Calvert sign is clearly visible from passenger trains on the Pennsylvania Railroad on which many thousands of additional people travel each year between Washington and New York.

With its warehouse sign, Calvert is capitalizing the opportunity it has to advertise itself to this tremendous group of spectators, including customers and prospective customers. And the cost of reaching this group is very reasonable.

Other plants the country over — Heinz, General Electric, American Chicle, Sears Roebuck, Beechnut, the steel companies and a thousand others — also use factory identification signs effectively. These advertisers let the passing public know when they are approaching the homes of their nationally advertised products.

Let the public know

The company name frequently isn't enough to do a good advertising job. In many cases, the advertised trade name or trade mark is much better known than the firm name. In other cases, such as in industrial lines, the trade name means nothing to the layman. And so, to get full advantage of the advertising opportunity afforded by plant locations, the advertiser should use a few words of selling copy explaining what the plant produces. The single line "Millers of Sure-Bak Flour" or "Home of Brillo Paints" will add substantially to the advertising value of a firm name which many may not recognize.

Illuminate for night-time traffic

If the transportation mediums carry a flow of traffic past your plant at night, keep your sign illuminated. If there is good will value in keeping your name before the public you can not afford to miss the additional advertising impressions that may be had for the economical cost of illuminating your sign. Whenever there is any question about the economy of plant sign advertising, make a traffic count and estimate the number of people likely to see your sign in a given period.

Comparison of the cost of making these advertising impressions with the cost of making a similar quantity in other media will help you decide whether or not a plant sign is a good investment for you. Ordinarily, after allowing a generous margin for those who are not likely to see your sign, the cost will be so low that the economy of this form of advertising will be obvious.

Identification of municipalities

If you approach a town by automobile on the main highways, no matter how small a village it may be, the chances are it will be identified by a clearly visible sign. In many cases the sign will specify the size of the population and give you the upper speed limit as well.

If you approach a town by railroad, regardless of how large it may be, you frequently will not find any form of identification until you reach the station. There, if the train doesn't stop, you will have to look hurriedly and strain your eyes to catch a fleeting glimpse of the faded lettering on a wooden sign. Or you may discover it on a water tank or cleverly laid out in a flower bed tended by the men who work around the station.

Railroad passengers are invariably interested in the names of the cities they pass through, if only to calculate how far they have come and how far they still have to go. And it is to the municipality's interest to encourage this curiosity — just as it is done with identification signs at the highways approaching the city.

Some railroads, eager to render this additional service to their customers, have properly identified each station. The Pennsylvania Railroad is one of the leaders in this respect, having used for many years a permanent type of station identification sign. Formerly their standard station sign was of cast iron, regularly repainted and varnished. More recently they have made replacements with porcelain enameled signs. The Baltimore and Ohio Railroad also uses a highly visible porcelain enameled sign on a number of stations.

In many cases, however — and this is particularly true of the Western roads — the identity of stations remains a mystery to the traveler unless he is interested enough to figure them out on his time table or inquire of the conductor. Advertisers with plants along the railroad right-of-way can take advantage of the traveler's interest by including the name of the city in their plant signs. The additional cost will be small and the information will help readers to remember his sign.

Chambers of Commerce and other

Street markers should have large, easy to read letters. The words "street" and "avenue" may be omitted, to give maximum space for the name. Porcelain enameled markers eliminate replacement problems.

similar organizations will be wise to examine how well their cities are identified. If they find that the city name is not clearly evident to those who pass through by highway and train, they will bring credit to themselves and to their city by erecting proper identification.

Though the railroads may, in many cases, be remiss in identifying their stations with permanent, clean and highly visible signs, they have recognized the importance of properly identifying each piece of rolling stock. Unlike the station signs, the lettering on the sides of the cars is large enough. But it is dull and lifeless, creating the impression that the equipment is old and worn out. Brilliant, metal base signs bolted onto the equipment would carry a much different story to all who saw them — an impression similar to that created by the sleek streamliners that are doing so remarkable a selling job for the railroads today and proving the value of showmanship in selling.

(When steel is again available for the rehabilitation of R.R. rolling stock the time would be appropriate for the improvement of identification methods.)

Truck signs

Proper identification of trucks — even the equipment of the larger lines that own and operate hundreds of units — is not general. Stand for thirty minutes wherever the truckers congregate in any large city and you find less than one truck in twenty bearing a clean, bright identification sign. The trucks and trailers of even the largest operators still carry faded, colorless signs which only give the public the impression that truckers cannot afford to keep up their equipment. The trucking industry, obviously, is in no position to create such a false impression. They are highly efficient, responsible carriers, and their equipment should immediately indicate as much to customers and prospective customers.

It is true that the identification of trucks that travel continually in all kinds of weather, subjected to road grime day after day, is not easily maintained. Signs or lettering on them must be able to withstand the elements and stand up under frequent cleaning. Porcelain enameled signs are ideal for this purpose. They will outlast the life of the truck and once they are washed after a grimy trip they will appear as brilliant in color and lustre as when they were new. Made up in standard sizes, they may be easily removed and transferred from truck to truck.

One of the larger laundries in New York, an organization which has absorbed several smaller companies who still retain their separate names, has a series of porcelain enameled signs of the same size for each of the separate companies. These signs are easily mounted on any of the trucks in a few minutes. Thus, the same fleet of trucks can economically serve the routes of all the related companies.

The company that has recognized the full value of truck signs more than any other perhaps, is the Railway Express Company. They sell space for mounting posters on the sides of their delivery trucks and then make full use of the remaining space with their porcelain enameled signs.

Delivery trucks in a wide variety of fields — department stores, laundries, dairies, groceries, markets, dry cleaning companies, fuel companies, and plumbing shops, as well as trucks delivering to commercial and industrial customers — all should be properly identified. Such advertising pays dividends, particularly in the home delivery fields where truck signs promote the name and telephone number of the advertisers. A distinctive truck also does a mass advertising job after the name is familiar. Before the war a Chicago florist had built a substantial business with no advertising other than his colorful trucks, carrying his name and telephone number. A New York plumber became well known in his section with similar advertising. This is a field where resourcefulness in capitalizing an advertising opportunity will enable one business man to take a volume of business away from his competitors. It is another means of economical sign advertising that no merchant can afford to overlook.

Many national advertisers have been making truck signs available to their dealers. Goodyear has a standard strip sign which may be used for trucks as well as for other purposes. Kelvinator has a standard porcelain enameled 40″ by 15″ truck sign in their regular list of dealer identification signs. The oil companies employ various types of truck identification signs, including free-standing porcelain enameled letters. Other companies are certain to furnish standardized truck signs for their

dealers as soon as they realize the value of being represented in the business sections the country over with the same standard identification appearing on dealer store fronts and in their other advertising. Truck signs provide one more link between the national advertising and the source of supply — the dealer's store.

Street and highway signs

A Chicago newspaper reporter once described the street sign situation in his city — a situation typical of a great many cities — as follows:

> "Of 500 corners checked, 229 had no signs at all. Concerning the 271 corners with signs — there is more than a fair chance you would have to be a cross between a hieroglyphist and a paleographer to decipher them; rusted signs, broken signs, dirty signs, and quite often no signs at all. . . . Obsolete signs, misleading signs — to those add obscure signs such as those at one of the city's busiest intersections. A giraffe would have no trouble there. Neither would a monkey, but pity the wandering motorist or poor pedestrian. Measly 2-inch letters, painted on the globe of a 16-foot lamp post which is some 150 feet from the corner, identify this intersection."

(Chicago now uses many porcelain enameled steel markers similar to those illustrated by the State-Madison marker accompanying this article.)

The sign situation that aroused the Chicago reporter's ire is not much worse than those to be found in other cities. Where street signs are to be found at all, the lettering is of microscopic proportions — a size that may have been appropriate in the horse and buggy days. Signs so small that they are difficult to see are not only annoying, but an actual hazard. Every motorist in an unfamiliar city or even in an unfamiliar section of his own city has found himself obstructing traffic while he attempts to decipher an illegible sign. And the hazard is greater when the motorist tries to read small, illegible street signs while keeping his car in motion.

The disparity in size between the common street sign today and the size demanded by present-day driving conditions is emphasized by the practices of advertisers. The oil marketing companies, for example, have found that a 42-inch disc in many cases is too small to stop a satisfactory volume of motorists; they have changed to a 72-inch disc instead.

Compare the visibility of the lettering on a 72-inch gasoline sign with the 3-inch lettering on a street sign that is 5″ x 20″ overall. The letters on many street signs designed to be read from an automobile moving in the street are, in many cases, only two or three times as high as the headline type in newspapers which are intended to be read closeup and without the handicap of other simultaneous interests.

Standard suggested

Some years ago, in an issue of *American City* Magazine, an architect suggested the following standard for street signs:

1. Letters at least 8 inches high. At important intersections, he pointed out, 12-inch letters might be preferable.
2. To prevent signs from becoming too wide, the words "street" and "avenue" should be omitted. There would be an occasional case where a street and avenue of the same name in the same city would be confusing unless separately identified, but such a case would be the exception.
3. Signs should be illuminated so that they would be visible at night.

In designing more effective street name and traffic signs attention should be given to the fundamentals of contrast as presented in Part VI (September 1944 *finish*). Color selection is particularly important in obtaining proper visibility.

Maintenance a problem

The importance of the maintenance

to Page 50 →

PHOTO COURTESY FEDERAL ELECTRIC COMPANY

The direct reflection of bright sunlight in the camera lens "washed out" the word "Madison", but the ease of reading porcelain enameled street signs can be judged by the "State Street" marker photographed at Chicago's busiest intersection.

Furniture & household equipment buyers

crowd Chicago for news of 1945

THE American Furniture Mart, the Merchandise Mart and the Palmer House (scene of the Housewares Show) were crowded, during the weeks of January 1 and January 8, with buyers eager for some news of products with which they might stock their stores for the months to come.

At the Press Club Luncheon at the American Furniture Mart on opening day Frank S. Whiting, vice president of the Furniture Mart and Chief of the Furniture and Household Goods Branch, War Production Board, furnished a clear-cut, unvarnished picture of the present situation as Washington sees it in relation to manufacturing for civilian use. *(Digest of talk to follow.)*

The Chicago Market Daily accounted for the sizeable attendance at the Mart as follows: "Most of the buyers had small hope of getting any quantity of goods but it is most important that they insure delivery of the merchandise they have on order or that old sources of supply will allot them on quota. Many retailers are making the trip more to get ideas for post-war selling than they are to get new goods. The job of store modernization and the selection of the best and newest type merchandise is a task which cannot be deferred until the close of the war.

"Many concerns are planning new innovations in appliances as well as regular merchandise which will so affect the business of selling home furnishings that it would be fatal for a buyer to wait and try to catch up with trends after the green light is turned on."

Strong interest in NRFA Store Clinic Show

A store modernization clinic, featuring elaborate exhibits by twenty manufacturers in the home furnishings and allied fields, was sponsored by the National Retail Furniture Association and was exhibited in the Merchants and Manufacturers Club in the Merchandise Mart.

Highlights of the Clinic were talks by store modernization authorities. Among those speaking were: James B. Carse, sales manager, The Kawneer Company; M. R. Ely, executive secretary, National Electric Sign Association; R. F. Hartenstein, chairman, Lighting Service Forum, Illuminating Engineering Society; and Fred Fulle, Sylvania Electric Products.

Stores are machines for selling

Morris Ketchum, Jr., A.I.A. Ketchum, Gina and Sharp, also one of the Clinic speakers, said: "Stores are complex 'machines for selling' and your store front, service areas, public traffic routes, materials, colors, lighting and mechanical equipment all have to work together or they won't work at all.

"The thought and study that goes into fabricating such a 'machine' is well repaid," he said. "There is no more competitive field than retail merchandising. You have to have as good a sales machine as the next fellow to stay in business and a better sales machine to keep ahead of him. No machine will do everything, but a good merchant in a good store at a good location makes an unbeatable combination."

He suggested that the store front should be the "billboard" and should be the means of attracting customers inside.

Watch for the cutbacks after V-E day.

Leo M. Cherne, executive secretary of the Research Institute of America, lawyer, economic forecaster and author, was the featured speaker at the National Retail Furniture Association dinner. In his talk the following warning was sounded: "The prospect that cutbacks after V-E Day, whether 23 or 40 per cent, will be sharp and sudden is a serious blow. Government planners in Washington warn that the present situation means no 'tapering off' period during which industry might gradually readjust to a peacetime economy. Inevitable result will be dislocation in individual companies, and the danger of serious transitional unemployment."

Appliance mart

Chief spot of interest in the Furniture Mart for the porcelain enameler was the appliance mart on the 17th floor. Although most of the appliances on display represented pre-war models, all of the usual exhibitors were present with displays varying from single appliances to elaborate showings of complete lines.

Porcelain enameled products

For a brief visit to the individual exhibits we started with *Holland Reiger Apex Corporation*, where we met Mr. E. C. Buchanan, vice president in charge of production at "Apex" and Stanley T. Campbell, in charge of production at the Holland Reiger plant. Washers on display had the usual porcelain enameled tubs. . . . We stopped at a nearby booth and visited with Mr. Sourbeck, general manager of *American Stove's* Lorain plant. . . . At the *Cole Hot Blast* exhibit, A. F. Wedderspoon, general manager, was in charge. An innovation was exhibited in the completely porcelain enameled interior of circulating space heaters. . . . The *Frigidaire* display included a home freezer with black porcelain enameled top; cabinet water heater with white porcelain enameled top; a number of all-porcelain refrigerators, including exterior, interior, hydrator pans, and freezing unit doors; and all-porcelain ranges. . . . Featured in the *General Electric* exhibit were two miniature revolving display rooms housed in plastic noses for aircraft. In one there were three miniature kitchens, complete with breakfast nooks and service bars. In the second were three laundry arrangements

to Page 28 →

PHOTO SECTION . . .

PART I • Porcelain Enamel Institute meeting (Cleveland • December 5 • 1944)
January 1945 *finish*

PART II • Stove industry meeting (Cincinnati • December 6, 7, 8 • 1944)
January 1945 *finish*

PART III • Furniture & housewares shows (Chicago • Weeks Jan. 1 & 8 • 1945)
This issue of *finish*

TOP: Left to right, Bill Brett of Alliance Wares, Inc., Emmett Dwyer of Wolverine Porcelain Enameling Co. and Jay Simons of Westinghouse, Mansfield.

CENTER: Speakers' table at the P.E.I. luncheon.

BOTTOM: Left—Ralph Bisbee, Westinghouse, who illustrated "Production Control." Right—R. R. Danielson of Metal & Thermit Corp.

In discussion at the recent stove meeting (ICHAM) are Franklin Johnston, editor of "American Exporter"; Arch Black of Norge Div., Borg-Warner Corp.; and E. A. Travis of National Enameling & Stamping, Milwaukee.

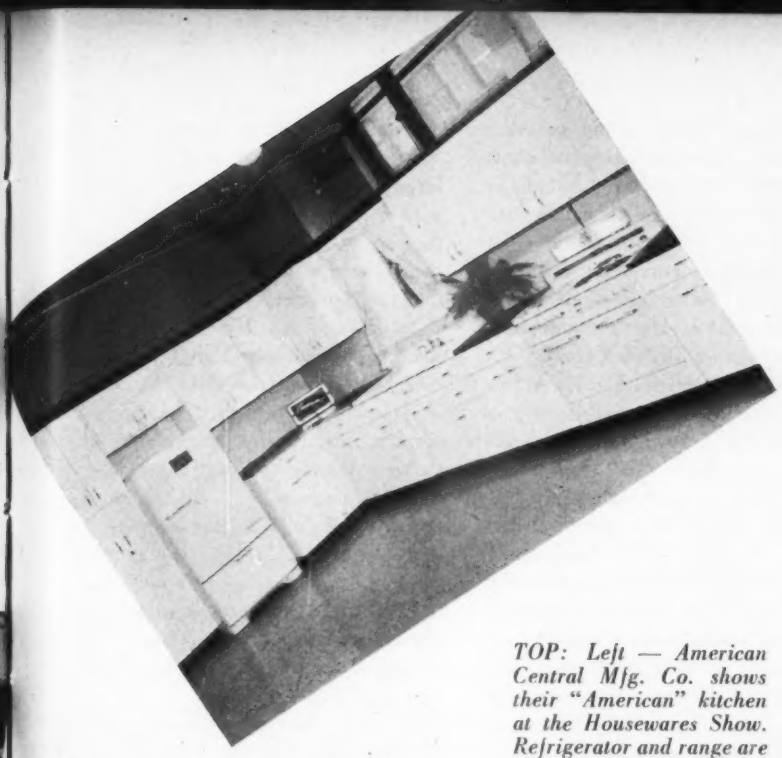
Sam Dunckel, Stove Association managing director, gives the straight dope to Roberts & Mander's H. S. Minster.

J. C. Lewis, Washington Stove Works; Walker Leach, Glenwood Range Company; Henry H. Morse, Florence Stove Company, new Association president; and E. M. Mackey, Washington Stove Works.

The smiles are from Albert Kahn, Estate Stove Co.; M. F. Cotes, Motor Wheel Corp.; and R. D. Nugent of Round Oak.

This jolly crew partaking of tidbits consists of Earl McGee, Renown Stove Company; H. C. Earhardt & P. C. Ecklin, Standard Gas Equipment; and Robert St. John, Ray-Glo, Inc.

J. L. Gabris, Robertshaw Thermostat Co., explains the "gadget" to R. T. Woodward of Warren Telechron.



TOP: Left — American Central Mfg. Co. shows their "American" kitchen at the Housewares Show. Refrigerator and range are by others. Right—Hardwick Stove's model kitchen as displayed at the Furniture Mart.

CENTER: Left—Art Leyerle of Vitreous Steel Products inspects a porcelain hooded lantern in the Coleman booth at the Mart. Right — Altorfer Brothers' ABC-O-Matics on display.

BOTTOM: Left—Tappan Stove tempts the palate in their Furniture Mart display. Right — Section of "Youngstown Kitchens" by Mullins, displayed at the Housewares Show.

→ *from Page 24*

—one for basement, one for first floor and the third a combination kitchen and laundry. Every detail was worked out carefully in the miniature models. . . . Met S. M. Schweller, chief engineer, Frigidaire, chatting with F. L. Meacham, manager of sales and service, Chicago Vitreous Enamel. . . . In the *Bendix* display two models of their automatic washer were shown. One, the completely enclosed cabinet type, had porcelain enameled feed door, rings and tubs. The "non-cabinet" had, in addition, a porcelain enameled base. . . . *Westinghouse* had one of the most complete appliance displays. Included were porcelain range, porcelain top water heater, automatic washers with porcelain tubs, and cabinet sink ensemble including porcelain enameled sink and dishwasher with enameled interior. Electric cookers had all-porcelain interiors. Porcelain parts on refrigerators included liners, defroster door, dessert tray and crisper pans. . . . In *Altorfer Brothers* exhibit the ABC-O-Matic washer was on display with porcelain enameled tub, porcelain on steel agitator and with top frame and wringer assembly also enameled. . . . *Easy Washing Machine Co.* displayed photos depicting the Parade of Progress in washing machine design and construction from 1877 to 1944. . . . In the *Roberts and Mander* display were "Quality" gas and combination ranges — all-porcelain — including burners and burner grids. . . . *Horton Mfg.* showed washers of both the conventional type, with porcelain tubs, and a Launder-Lux (small auxiliary washer designed to mount on the main agitator) for the small daily washing. . . . The *Estate Stove* display included porcelain enameled ranges and "Heatrolas"—and a large lighted map of the United States showing the location of distributors. . . . Bumped into Fred Parker, OPA, and met J. Langdon Parsons, director of Parsons & Robertson Ltd., Adelaide, South Australia. . . . *Kelvinator-Leonard* showed no products, but offered a display of color drawings showing "Appliances for Tomorrow." . . . *Jacobs Manufacturing Co.* of Bridgeport, Ala., showed magazine circulator coal heaters completely enameled. . . . In the *Coleman Lamp & Stove Co.* display we found porcelain enamel represented on tops for lanterns, which have been in great war demand, and cast iron bodies for gasoline irons. . . . In the *Tappan Stove* display were porcelain enameled gas ranges with divided tops and full color drawings depicting modern kitchens. . . . In the display of *American Fixture & Mfg. Co.* we found porcelain enameled refractory side-leaf breakfast sets. . . . *Gibson Refrigerator* showed a refrigerator with full-width porcelain enameled vegetable pan, and their all-porcelain electric ranges. . . . *Moore Corporation* showed both enameled gas and combination ranges. . . . *Admiral Corporation* had an elaborate display of miniature show rooms representing the complete appliance store with refrigerators, heaters, ranges, radios and other electrical appliances. A large photo showed a refrigerator with a home freezer compartment in the top at "32° below freezing" with the balance of the food compartment interior "purified moist cold—38° F." . . . *Knox Stove Works*, Knoxville, Tenn., showed porcelain enameled coal heaters and porcelain enameled coal and wood heaters. A range on display, with exterior panels removed, showed a complete porcelain enameled steel chassis. . . . In the *Landers, Frary & Clark* display were enameled "Universal" electric ranges, washers, and ironers with porcelain enameled tops, and electric irons with porcelain enameled steel bodies. . . . *Crown Stove* showed enameled gas and combination ranges. . . . In addition to enameled ranges in the *Caloric* booth was the coal burning heater with porcelain enameled interior and exterior parts *(See January 1944 Finish)*. . . . In the *Blackstone* display were washers of both the conventional and cabinet type. . . . *Crosley* had one large refrigerator on display where porcelain enameled cold storage container for meats and enameled freezer door and interior were readily visible.

Although there was little to be seen that was "new", the Appliance Mart was crowded with interested buyers at the time of our visit. It was interesting to note the number of export buyers in evidence, including representatives from Canada, Mexico, Australia, New Zealand, etc.

What about 1945?

Digest of an address *By* FRANK S. WHITING

BY the beginning of 1944, though many difficulties remained to be surmounted, great strides had been made in increasing the supply of materials. Many obstacles that had seemed insurmountable early in the war period had been hurdled in 1943.

The more favorable materials situation permitted not only increased war production, but also slight increases in certain categories of goods for civilians, such as galvanized ware, and the resumption of production of other civilian goods, such as electric irons and ranges. In 1944, shipments of all goods from manufacturers for non-war purposes represented approximately 39 per cent of the total, as compared with approximately 38 per cent in 1943.

In the middle of 1944, though the end of the war was not yet in sight, the importance of advance planning for speedy reconversion of facilities, that would not be needed after the defeat of Germany, had been recognized by WPB and other Government agencies. In the fall of 1944, following consultations with Industry concerning reconversion problems, WPB issued two regulations designed to enable manufacturers to prepare gradually for future reconversion: priorities Regulation 23, authorizing the development of experimental models for post-war production, and priorities Regulation 24, authorizing the purchase, on unrated orders, of machine tools, fixtures and similar equipment.

Also in the fall of 1944, the "spot authorization" procedure was effected

through the issuance of priorities Regulation 25.

While the materials situation in 1944, generally speaking, was less difficult than it had been earlier during the war period, the manpower shortage became increasingly acute. By the end of the year, manpower was the principal limiting factor in production.

As a result of intensification of activity on the battle fronts, and the consequent stepping up of requirements for war goods, the manpower situation became so critical late in 1944 that two measures had to be taken with relation to civilian production to assure the meeting of war requirements:

1. On December 1, 1944, WPB adopted the policy of granting no "spot authorizations" in Group 1 labor areas and in certain other labor areas for 90 days following the adoption of the policy.

2. On December 16, 1944, WPB announced that programs for the manufacture of civilian items would, in general, be restricted to the production level allowed during the fourth quarter of 1944.

It must be perfectly obvious to you that the pendulum of production has swung back and forward several times this year. From January 1944 to June, production was carefully and firmly held down. "Waiting for the Invasion" was the key. From July until Nov. 15 it was a case of preparing for the transition from war production to other types of essential production. "Reconversion" was the password. From late November and especially December 1st on, the whole emphasis has been on war production. This year there has been a perfect example of the need to keep mentally and industrially flexible and prepared for changes during wartime.

Be prepared for the natural consequences of set-backs, as well as victories, whether military or industrial. The rapidity and urgency of such changes, especially during wartime, brings us to a realization that we are not going to get out of this war without doing a little real industrial suffering on the home front. However, no one that I know believes in a short sighted policy of suffering just for sufferings sake.

There's no question among those in Washington that the "heat's on." This is war. But again, in analyzing late moves, you will not find that most civilian goods have been dierctly limited to a greater extent. The cuts are in plans for future expansion. In other words, future increases are being postponed to an indefinite date. It looks as though civilian production will just try to level off at present rates. There will be some exceptions in shortage materials that are urgently needed by the Military.

Manufacturers must plan carefully and thoroughly—not only their product, but their equipment and their personnel. And this includes their sales organization—because some day they'll be needed.

Those that prepare well will reap a good harvest. The back-log hanging over industry is larger than ever before in its history—not only for home uses but also the additional war goods yet to be made, the hospitals, schools, institutions and hotels, and that will keep the full facilities of the industry engaged. The question of Military rest-area and rehabilitation housing must be met now, and in my opinion will expand greatly in the future.

One fact that has been definitely established these last three years is that the full productive capacities of these industries have never been reached. In the future, a terrific distribution, selling and advertising job must be done to dispose of the mountains of goods these factories can produce. People can be made to want new products, but only real promotion, sales forces and advertising can change those wants into purchases.

This is the time when ideas are priceless — new ideas, new products, new production methods and new enterprises as applied to commercial production, will prove as valuable to industry in the future as those being developed for the military are today. This sort of *NOW PLANNING* means everything to all of us.

The housewares show . . . .

SEVERAL of the lower floors of Chicago's Palmer House were devoted exclusively to displays of everything that might be termed "housewares" while the main display room on the fourth floor was devoted principally to displays of major appliances and allied products.

Porcelain enamel represented

In our visit to the individual display rooms we found many of the leading enameled kitchenware manufacturers represented. For the most part the ware on display represented standard models previously shown. Among the producers of porcelain enameled kitchen ware who had individual displays were: *Bellaire Enamel, Columbian Enameling & Stamping, Crunden-Martin Mfg., Federal Enameling & Stamping, Fletcher Enamel, Jones Metal Products, Lisk-Savory, Moore Enameling & Mfg., National Enameling & Stamping, Polar Ware, Strong Manufacturing,* and *United States Stamping. (Belmont Stamping & Enameling, Canton Stamping & Enameling,* and *Vollrath* had their showing at the Merchandise Mart.) . . . An interesting new cooker-canner was displayed by *Vischer Products Company*, Chicago. This "Flex-Seal" cooker-canner has stippled porcelain enamel body and porcelain enameled interior pans when used as a cooker. . . . *Republic Stamping & Enameling* advertised their line of "Republic" enamelware with pyrex covers, but their display showed examples of war work. . . . Outstanding display of interest in connection with enameled kitchen ware was that of the *Association of Enameled Utensil Manufacturers Council.* In this display "personalized" enameled ash trays were being produced for visitors. A complete display of the comprehensive advertising program of the kitchenware group was represented as well as provision for hearing radio "spot announcements" scheduled in the group's publicity and advertising plans.

to Page 48 →

This photograph was taken in the plant of another of the country's leading stove manufacturing plants where "Century" Ground Coat enamels have been used for years — and, used exclusively for the past four years.

"Century" enamels are time proved first in our own modern job enameling plant, and then through years of use in plants of some of the country's leading producers of quality enameled products.

There's a complete line of time proved "Century" frits to fill your needs — Ground Coats; Steel Cover Coats (Antimony-Bearing or Antimony-Free); Acid Resisting; and Enamels for Cast Iron. Plant men like them for their day-by-day dependable results — executives like them for the resulting low "per-square-foot" cost.

If your problem is one of enamels or enameling bring it to Century, where years of experience in both are at your service.

Century Vitreous Enamel Company

6641-6661 SOUTH NARRAGANSETT AVENUE • CHICAGO • ILLINOIS

Nineteen Hundred executive

to head washer and ironer group for 1945

MEMBERS of the American Washer and Ironer Manufacturers' Association held their annual meeting at the Edgewater Beach Hotel, Chicago, January 11.

One of the first orders of business included a pronouncement of policy for the group in the light of the present war situation. The Association was prompt and definite in going on record for the full prosecution of the war effort. All speakers agreed that post-war planning must take a back seat.

"The date of this annual meeting is set by our by-laws," said Richard J. Simmons, vice president, Birtman Electric Co., Chicago, as soon as the opening roll-call had been held. "Today's deliberations have been planned for a considerable time. Until very recently making plans for the post-war period was definitely in order for this industry as well as all others, and was encouraged by the various governmental agencies. Now, in view of the more critical turn which the war has taken it is timely that our industry reaffirm our dedication to the successful prosecution of the war."

All out for war

That there could be "no doubt as to this industry's attitude," Mr. Simmons introduced the following resolution, which was adopted unanimously:

"RESOLVED: — That it is the sense of this meeting that in view of the military situation, the household washer and ironer manufacturing industry continues to recognize that the prosecution of the war effort to a quick and conclusive termination is of an importance transcending all other present considerations, and that this industry, therefore, will engage in no activities which will interfere with its fullest contribution to the successful conclusion of the war effort."

Memorialize two late members

Two other resolutions were passed at the meeting to record in the Association minutes the appreciation of the group for the services rendered the industry by the late S. E. (Sig) Anderson, founder of New Monarch Machine & Stamping Company, Des Moines, Iowa, and George Haag of the former firm of Haag Brothers, Peoria, Illinois.

Morning session — John Wicht, chairman

John M. Wicht, director of the Home Laundering Equipment Division, General Electric Company, Bridgeport, Connecticut, completing his third term as Association president, served as chairman of the morning session and toastmaster for the evening dinner.

Louis C. Upton — new president.

As further clarification of the organization's policy he said, "The substance of the reports of all our post-war planning committees was prepared prior to the critical warring period through which we are passing. Nothing which will be said today, therefore, should be construed as any indication that we are swerving from our resolve to remain 100 per cent dedicated to full cooperation in the war effort. We are still in war production and do not intend to lose our prestige with the War Department." As an answer to "What lies ahead?", Wicht said, "First . . . Victory, of course."

Included in his outline of suggested work for the Organization following victory were: Support of standardization and research work, and adequate promotion and educational material. He referred to the possible effect of single, long-term mortgages for homes on the industry's policy.

In a lighter vein the retiring president, referring to the fact that all production of household washers and ironers has been suspended for almost three years, said: "On this I stake my claim to lasting fame in the annals of our industry, that under my administration the smallest number of home laundering units was sold, in spite of the greatest sales potential in history."

One reference in President Wicht's talk should be of special interest to enamelers. Among many potential innovations for the industry he referred to the possibility of washer manufacturers using organic instead of inorganic finishes with "resulting lower baking temperatures." He displayed a sample of "silicon rubber" — bounced as a rubber ball—which it is alleged will stand 60° below zero or 575° F., and is immune to acids and alkalis.

Officer and committee reports

In presenting the treasurer's report, B. J. Hank, president and chairman of the Board, Conlon Corporation, called attention to the long association of cooperating members by referring to the organization date — May 31, 1916.

In a report on the Organization's publicity activity, William Shaw, public relations advisor to the Association, reported on an invitation by the Union Pacific Railroad to participate in one of the Railroad's broadcasts over national hookup. Date set for the laundry equipment manufacturers' participation in this program is March 18. Mr. Shaw also commented on the wholehearted cooperation of

the women's magazines with the Washer-Ironer group.

A. H. Noelke of McClure, Hadden & Ortman, executive secretary of the Association, introduced Mr. W. V. Brumbaugh who has been appointed to head the Washington office and will serve the membership in the Capitol city. Brumbaugh is a graduate engineer and past president of the Washington Trade Association Executives group.

In his report for the Standards and Tests Committee, Eduard Geldhof, vice president of 1900 Corporation, stressed the importance of "wearability" as well as "washability" in connection with the establishment of test standards.

Afternoon session — Roy Bradt, chairman

I. N. Merritt, vice president and general manager of the Conlon Corporation, Advertising and Publicity Sub-Committee chairman, echoed the usual comment of sales minded executives when he said, "The technical phases are *important*, but if there wasn't someone to do the selling none of us would have jobs."

Homer Reeve, general sales manager for Easy Washing Machine Corporation, gave a brief picture of export possibilities. He said indications are that "foreign trade, if properly cultivated and re-cultivated, will add materially to employment in our country after the war. Each manufacturer must do the necessary plowing and cultivating and develop an export program in the nature of a long-range plan."

Roy Bradt, vice president of Maytag Company, chairman of the Post-war Planning Committee, "played down" post-war planning as having lost its significance until after the present critical war situation has eased. In order to "be prepared" to counteract the inevitable tendency to unemployment which is now expected to result with eventual swift curtailment in war production, some suggestions were offered for company "after-hours" planning, such as:

Get plans from department heads for all angles of the business — both factory and office — for screening by top flight executives to cut out any snags to smooth reconversion. "No washers can be built as long as one part is missing."

Have production schedules ready for use on short notice, whether in connection with war production or separately.

Dave Hays, General Electric engineer, reported for the Products Safety Committee.

Judson S. Sayre, president of Bendix Home Appliances, Inc., and chairman of the WPB Industry Advisory Committee, spoke of the earlier optimistic attitude in WPB for the possibility of some washer production in the fourth quarter of 1944, and referred to the negotiation of the spot authorization plan. Said Sayre, "Von Rundstedt changed this time table."

B. J. Hank, chairman of the OPA Industry Advisory Committee for manufacturers, outlined the activity of his group. It was indicated that 60 per cent of 1941 production *might* be expected for the first six months after the "go" sign. The Advisory Committee has suggested to OPA that a plan for quick pricing be evolved that will not require too much paper work.

The selections of the Nominating Committee, headed by W. Neal Gallagher, president and general manager of the Automatic Washer Company, were elected unanimously. Louis C. Upton, president of 1900 Corporation, St. Joseph, Mich., is the new Association president.

Other officers are:

Vice Presidents:

Walter K. Voss, vice president, Voss Bros. Mfg. Co., Davenport, Iowa.

H. A. Bumby, president, Barlow & Seelig Mfg. Co., Ripon, Wis.

Richard J. Simmons, vice-president, Birtman Electric Co., Chicago, Ill.

Treasurer

B. J. Hank, president and chairman of the board, Conlon Corporation, Chicago.

Executive Committee

L. C. Upton, president, 1900 Corporation, St. Joseph, Mich.

Roy A. Bradt, vice president, Maytag Company, Newton, Iowa.

J. C. Nelson, chairman of the board, Easy Washing Machine Corp., Syracuse, N.Y.

Judson S. Sayre, president, Bendix Home Appliances, Inc., South Bend, Ind.

A. E. Askerberg, president, Horton Mfg. Company, Fort Wayne, Ind.

Oscar A. Lenna, president, Blackstone Corp., Jamestown, N.Y.

Delbert A. Rizor, vice president, Dexter Company, Fairfield, Iowa.

Does porcelain enamel need a new name?

ONE of the latest committees of the Porcelain Enamel Institute is the "Name and Trade Names Committee," with R. A. Weaver, president, Ferro Enamel Corporation as chairman.

As an introduction to the work of this new committee we quote a letter received recently from the chairman.

"Gentlemen:

"At a recent meeting of the Trustees of the Porcelain Enamel Institute, I was instructed (as Chairman of the Committee to study the possibilities of a better name for our product) to have this Committee suggest to the trustees a new name.

"In order to help the Committee, will you look over attached list of proposed names and mark the first five of your choice in the order of your choice? If you can suggest other names, we'll be glad to have them.

"This whole matter is in the investigational stage and nothing will be done without complete and careful consideration in all quarters and without virtual unanimous agreement of the members of the industry.

"1945 Porcelain Enamel is so very much improved over 1935 as to be virtually a new product. In many quarters, the 1935 "enamel" had a bad name. Our present fine product is confused with cheaper and inferior finishes by the use of the word "enamel" in our name.

"Let's give our fine new 1945 product a fine new name.

"We'll appreciate your cooperation.

"Yours very truly,"

(Signed) R. A. Weaver

With the letter were a number of name suggestions such as the following:

to Page 48 →

The "Lo-Hi" pH process for chemically cleaning steel preparatory to porcelain enameling, makes practical a CONTROL in the pickle room that gives management the know-what-to-plan-on the rest of the way in production. The findings of our laboratories and our experience in solving this problem for many manufacturers, are at your disposal.

NORTHWEST CHEMICAL CO.

9310 ROSELAWN DETROIT 4, MICH.

pioneers in pH cleaning control—serving you since '32

Run **HARSHAW** *Ground Coat*

for

Smooth out

YOUR PRODUCTION WRINKLES

• The demand for lighter applications and better appearance, coupled with today's production problems, makes it necessary to have better grounds. Cobalt Ground Coats are not spectacular but like the infantry they are essential for most operations.

Research on grounds at Harshaw has continued without interruption . . . Harshaw supplies blends that bond early and yet do not overfire easily. More than a year's production experience with these new grounds has confirmed their better overall firing range and bond.

HARSHAW

SEND FOR
32 page book listing Industrial Chemicals
72 page price list of Laboratory Chemicals

THE HARSHAW CHEMICAL CO.
1945 East 97th Street, Cleveland 6, Ohio
BRANCHES IN PRINCIPAL CITIES

NEWS

Wedemeyer recovering from serious illness

Word comes to *finish* that "Norm" Wedemeyer, with Rohm and Haas Company, Philadelphia, is convalescing from a serious illness which started early in November. He was taken ill at Wright Field and, upon his return home, was hospitalized with "strep" pneumonia in both lungs and a "strep" infection in sinuses and one ear. He is now out of the hospital and, from all indications, should be back on the job by the time *finish* is off the press.

Ferro Enamel announces postwar building program

Ferro Enamel Corporation, Cleveland, Ohio manufacturers of porcelain enamel finishes, recently reported the appropriation by its directors of approximately $350,000.00 for postwar building improvements.

According to the report, improvements will include twelve new modern type smelters, used in their production of porcelain enamel "frit." The smelters are to be equipped with the latest automatic control devices, and each two units will be served with an automatic dryer.

The new smelters are to be built in accordance with an experimental unit installed by Ferro last year. According to R. A. Weaver, president of the company, this experimental smelter has been in operation for six months and is giving superior results in both quality and uniformity of product.

The report further states that building alterations will provide improved working conditions and all frit making operations will be conveyorized. Construction is to begin as soon as War Labor Board approval has been received.

We read that Francis D. Bowman, well known in advertising circles as advertising manager of Carborundum Company, has recently been appointed director of public relations for the organization.

Staff changes at the University of Illinois

Floyd A. Hummel, B.S. in Ceramics 1937, recently accepted a position as Special Research Assistant Professor in the Department of Ceramic Engineering at the University of Illinois. He is working on the Army Air Forces' cooperative research project on the development of special ceramic coatings. From 1937 to 1939, he worked for the Onondaga Pottery Company at Syracuse, New York, and after a year's graduate work in physical chemistry, returned to the Onondaga Pottery Company. In November 1941, he joined the research staff of the Corning Glass Works, where he remained until joining the staff of the Department of Ceramic Engineering.

Louis M. Doney, B.S. in Ceramics 1940, recently employed as a Special Research Associate, left the staff of the Department of Ceramic Engineering to accept a position as Glass Engineer for the Sylvania Electric Products Company at Emporium, Pennsylvania.

Porcelain Enamel Specialties Company of Baltimore, Maryland, headed by Howard Michel, has announced a change of company address. The new quarters opened by the company are at 517 North Charles Street in Baltimore.

New division manager of Aviation Corporation

Elmer I. Boardman has been named Manager of Heater and Boiler Sales of Spencer Heater Division of The Aviation Corporation at Williamsport, Pa., according to announcement of Wm. F. Wise, executive vice president of AVCO.

Mr. Boardman has had 25 years' sales and executive experience in the radiator, heating appliance and air conditioning field with American Radiator Company; National Radiator Corporation; Richardson & Boynton Company; Armstrong Furnace Company and Lennox Furnace Company.

Immediately prior to his Spencer Heater Division appointment he was vice president of Automatic Coal Burner and Affiliate Furnace Man Inc.

Philco to produce household freezer chests

Expansion of the company's activities to include the production of household freezer chests for processing and preserving frozen foods will start as soon as war conditions permit, John Ballantyne, Philco Corporation president, announced in a letter to stockholders accompanying the year-end dividend.

"Recent estimates indicate that today approximately 3,000,000 families in the United States are using lockers in central storage depots to store frozen foods," Mr. Ballantyne pointed out. "It is our belief that at least one-quarter of this number, or 750,000 families, will want freezer chests in their own homes within the first two years after the war. As the use of frozen foods increases in later years, the market should correspondingly grow in size and importance."

Philco will produce a full line of freezer chests to meet the various needs of the public, Mr. Ballantyne indicated. They will be suited for the use of single-family homes, apartment houses, and on farms, where greater capacity is required.

Briggs buys Cincinnati plumbing ware manufacturer

Briggs Manufacturing Company has purchased the John Douglas Company of Cincinnati, Ohio, one of the country's oldest independent manufacturers of plumbing ware and plumbing fixtures, W. O. Briggs, Chairman of the Board, and W. P. Brown, president of Briggs, announced recently. The purchase was made in order to enlarge the company's postwar plumbing ware manufacturing facilities, the report stated.

Briggs entered the plumbing ware business in 1932, when it expanded its automobile body manufacturing facilities for the mass production of bathtubs and sinks. The company at that time devised facilities to make this equipment with the same type of machinery and methods that it used in the automobile body business.

"Before the war Briggs had facilities to make enameled iron bathtubs, lavatories and sinks, but was not equipped to manufacture china plumbing ware or plumbing fixtures," said the Briggs' president. "By purchasing the John Douglas Company, Briggs has added enough facilities to what it now has, so that in the postwar world it will be able to offer a complete line of plumbing fixtures for residential installations and institutional projects such as hotels and hospitals."

As a subsidiary to the Briggs Manufacturing Company, the Douglas Company will have as operating manager John Douglas III, grandson of the founder.

Hewlett to direct frit sales and service for Ing-Rich

Ingram-Richardson Manufacturing Company of Indiana Inc., Frankfort, have announced the appointment of J. Thomas Hewlett as director of frit sales and service for the company. Mr. Hewlett is not new in the enameling industry, having been associated with Ing-Rich for the past eighteen years as a technician for the frit sales and service department.

Projects for P.E.I. Process Development Committee announced

The first meeting of the New Process Development Committee of the Porcelain Enamel Institute was held in Cincinnati, Ohio, on December 11. The work for 1944 was reviewed, and the information released indicates that reports on the various projects are now in final stages of completion and will be ready for distribution in the near future.

The subjects to be covered in current investigations, and during the year 1945, were discussed and the following were selected for Committee work:

1. New ceramic coatings.
2. New ideas in pyrometry.
3. Metal treatment for enameling.
4. Methods of de-enameling.
5. New methods of fabrication.
6. Developments in welding.
7. Importance and methods of inspection.
8. Advanced developments in decorative processes.
9. Methods for cutting enamel sheets.
10. Soft ground coats with cover coat enamels.
11. Developments in automatic spraying.
12. Enameling iron development as affecting processing.

Members of the committee are as follows:

L. E. Nordholt, Chairman, Tennessee Enamel Mfg. Co., Nashville, Tenn.

A. I. Andrews, University of Illinois, Urbana, Ill.

H. D. Carter, Harshaw Chemical Company, Cleveland, Ohio.

G. W. Dykstra, Great Lakes Steel Corporation, Detroit, Mich.

J. W. Hoehl, Wolverine Porcelain Enameling Co., Detroit, Mich.

J. W. Iliff, Harshaw Chemical Company, Cleveland, Ohio.

R. M. King, Ohio State University, Columbus, Ohio.

F. R. Porter, Inland Steel Company, Indiana Harbor, Ind.

G. H. Spencer-Strong, Pemco Corporation, Baltimore, Md.

B. T. Sweely, Chicago Vitreous Enamel Product Co., Chicago, Ill.

R. E. Taylor, Enamel Products Company, Cleveland, Ohio.

New G-E radio program in support of appliance retailers

The appliance and merchandise department of General Electric Company launched a new nationwide radio network program January 15, in support of the G-E appliance retailers throughout the country as a further

means of preparation now for postwar business. All G-E appliances and products will be advertised on the program.

The new program, titled "The G-E House Party," will be heard coast-to-coast, Monday through Friday, 4:00 to 4:25 P.M., E.W.T., over the full network of the Columbia Broadcasting System. Originating from the studios of KNX, Hollywood, it is the plan to tour the show to other cities in the near future.

By stimulating peoples' wants and desires to own new electrical appliances for better living the sponsors hope that "The G-E House Party" can be made a job-creating influence by helping to maintain a high-level of postwar production, according to B. W. Bullock of the company's appliance and merchandising department at Bridgeport, Connecticut.

Iraq and Iran distributor visits Detroit

Following his participation in the recent international business conference at Rye, N.Y., where he headed the Iraq delegation, Said Hafidh Al-Kadi traveled to Detroit to discuss postwar business prospects with officials of the Norge Division of Borg-Warner Corporation. He is shown here with Howard E. Blood, Norge president, who is explaining a detail of the company's refrigerator mechanism, while Arch Black, export manager, and M. G. O'Harra, vice president in charge of sales, listen. Said Al-Kadi is Norge distributor in Iraq and Iran.

Paul Goodolf, who was for a number of years superintendent of porcelain enameling at Lansdale Porcelain Enamel Company, Lansdale, Pa., and who has for the past five years been superintendent for Standard Enameling Company, Culver City, Cal., is reported to be representing Ferro Enamel Corporation on the West Coast as service engineer.

A.G.A. recommends appliance sales policies for utilities

The Executive Board of the American Gas Association has recommended to the gas utility industry certain sales policies for their consideration in promoting the sale of gas appliances and gas service. These policies, which the board indicates are offered as suggestions only, follow:

"1. That national, regional and state gas associations should cooperate with all similar national organizations in all allied fields.

"2. That gas utilities should perform the task of promoting the sale of new and improved gas appliances to the point of assured customer acceptance.

"3. That as customer acceptance materializes, the activities of the gas utility should be continued in such a manner as to maintain continuing acceptance of gas service and to increase the flow of gas appliance sales through normal channels of distribution.

"4. That the gas utility should assume responsibility for gas appliance sales training of personnel (utility and dealer alike), utilizing the cooperation of gas appliance manufacturers.

"5. . . . should assume responsibility for training dealers in installation and service techniques, utilizing the cooperation of gas appliance manufacturers.

"6. . . . should keep dealers informed as to the increased merchandising opportunities offered to them in the gas appliance field, e.g., additional lines, new products, new rates, etc.

"7. . . . should inform all concerned with home construction and financing on all matters having to do with gas equipment and gas service.

"8. . . . should provide or make available to dealers facilities for financing gas appliance installment sales as attractive and advantageous as the utility's own.

"9. . . . should initiate and promote appliance sales campaigns with cooperating gas appliance dealers.

"10. That home service and all other aids maintained by the gas utility should be made available to cooperating gas appliance dealers.

"11. That the gas utility should provide full information as to its policies and practices so as to establish a relationship of mutual understanding and confidence with the dealers."

Frigidaire service department appointments

Paul V. Sprout, service manager, Frigidaire Division, General Motors Corporation, has announced the following appointments in the Service Department. C. P. Ogden has assumed the position of supervisor of Service Parts Sales and the Field Contact Division; R. K. Eley, that of supervisor of the Service Technical Division, in complete charge of training, service literature, field shop opera-

to Page 40 →

TO GUARANTEE ABSOLUTE UNIFORMITY in frit, PEMCO operates the only completely continuous smelter in the porcelain enameling industry. Control—entirely by electronics—eliminates even the slightest possibility of human error and produces frit of a uniform quality accepted as "the basis for comparison" by the industry.

Given the opportunity we'll demonstrate this fact to your satisfaction.

Modest

Of all the factors that have contributed to make PEMCO a "big" company "Bombast" cannot be included. Modesty is sometimes a failing rather than a virtue.

Because there are few if any who can so justifiably claim so many and such important contributions to the development and improvement of the porcelain enameling industry.

These contributions have been possible only because of the inherent knowledge of our founder plus a tremendous amount of immediate research—plant modernization and the determination to excel.

The results of these efforts are clearly defined in the form of PROFITS to those companies who have availed themselves of Pemco Quality and Pemco Service.

To know what to do is Wisdom; to know how to do it is Skill; but to do the thing as it should be done is Service.

PEMCO CORPORATION

BALTIMORE MARYLAND

"ALWAYS BEGIN WITH A GOOD FINISH"

→ *from Page 37*

tions and Field and Factory Technical Contacts; R. V. Leslie, the post of supervisor of the Service Inventory Control Division, replacing A. J. Ritten who is now a member of Frigidaire's Market Research and Organization Department.

Lindemann & Hoverson "E" award photo

It was reported in January *finish*, before photographs were available, that the A. J. Lindemann & Hoverson Company, Milwaukee, Wis., had been awarded the Army-Navy "E" pennant.

The award was presented by Col. Emery E. Larson, U.S.M.C. and received by E. A. Lindemann. Token presentation of "E" pins was made by Lt. Carl E. Bowers to six L&H employees. Two of these employees, Henry Broetzmann and Charles Rewolinski, had been in the employ of the company for over fifty years.

In the accompanying award photograph are, left to right, E. A. Lindemann, company president; H. J. Berman, vice president and works manager; Commander F. J. Nuber, Navy Inspector; H. A. Halvorson, general sales manager; and Col. Emery E. Larson, U.S.M.C.

DeVilbiss spray finishing school announces four classes for industrial finishers

Four one-week classes will be held for industrial finishers in the first half of the 1945 School of Spray Painting to be conducted by The DeVilbiss Company, Toledo, Ohio. Sessions started January 15th, and will also be held the weeks of March 12th, April 16th and June 18th. Each class will include the same classroom instruction and shop work, and will be open to all regular users of DeVilbiss Spray Painting Equipment.

When questioned concerning the relationship of the school to porcelain enameling practice, an executive of the company stated: "Since spray equipment, its installation and maintenance are basic fundamentals within the finishing industry, that phase of our training school is the same for all students. It occupies the first three days of our school week. During the remaining two days we give specialized instructions of the character desired or we consider in the best interests of the needs of each student.

"The application for admittance to our training school tells us the character of the finishing that is done by each student and indicates to us what specialized instructions would be most helpful in each case. Accordingly, any porcelain enamelers will receive specific training and instructions in this type of finishing while they are in the school."

Industrial finishers interested in these free courses should write to The DeVilbiss Company, Toledo 1, Ohio.

115 Lieutenant-Generals in Estate's production army

In September, 1944, *finish* a brief outline was presented covering Estate Stove's "production army" idea for awarding "commissions" to employees who were on the job every working day for prescribed periods. Everyone starts initially as a private, and each month promotions are announced. As of December 1, 115 had attained the three-star rank of lieutenant-general. Fifteen from the enamel plant are among this total.

With another two months of sticking to the job — not missing a day or an hour for any cause, even sickness — these people can attain the highest army rank.

P. E. I. Forum Committee outlines plans for next meeting

(no meeting will be held during period of curtailed transportation)

At a recent meeting of the Porcelain Enamel Institute Forum Committee, at the Netherland Plaza Hotel in Cincinnati, plans were outlined for the next three-day Forum Meeting scheduled to be held at the University of Illinois. As yet no definite date has been set for the meeting due to present wartime transportation conditions and the plea of the ODT for curtailment of other than essential wartime travel.

Plans will be completed for the meeting, with program and scheduled speakers, insofar as possible, so that no time will be lost scheduling the meeting once transportation facilities are less congested.

The tentative program includes a symposium on pickling and papers by engineers on at least three methods of metal preparation. There will also be consideration of "spraying vs. dipping," with talks on methods and equipment for automatic spraying and a symposium on spraying.

New materials, new metals plus new methods and equipment are also included in the program.

The Forum is planned as a self-supporting project, with probable registration fee of $10.00 for the complete course. The Board of Trustees of the Porcelain Enamel Institute have authorized a fund for underwriting the project.

Members of the Forum Committee are as follows:

F. E. Hodek, Jr., Chairman, General Porcelain Enameling & Mfg. Co., Chicago, Ill.

L. E. Nordholt, Tennessee Enamel Manufacturing Co., Nashville, Tenn.

R. M. King, Ohio State University, Columbus, Ohio.

A. I. Andrews, University of Illinois, Urbana, Ill.

Edward Mackasek, Porcelain Enamel Institute, Washington, D.C.

Pioneer washer manufacturer dies

It is learned that George Haag, pioneer washing machine manufacturer, who, together with his brother "Al," until recent years controlled Haag Brothers, Peoria, passed away recently. The Haag Brothers firm dissolved the manufacturing business and sold their factory and site a few years ago to Caterpillar Tractor Company.

O. L. "Ollie" Earl, formerly with Mullins Manufacturing Co., Salem, Ohio, sustained a leg fracture as a result of a recent fall on one of Chicago's ice-covered streets.

He has been recuperating at his home in Salem, Ohio, but should be entirely recovered by the time *finish* is in the hands of readers.

Mills Industries' executive appointed to Refrigeration Industry Advisory Committee

Sterling Smith, manager of the Refrigeration Division of Mills Industries, Inc., Chicago, Illinois, has been selected as one of the 20 members of the General Refrigeration and Air Conditioning Manufacturers Industry Advisory Committee which meets in Washington the second Wednesday of each month to discuss the problems of Production, Material, Manpower, Limitation Orders and Reconversion, and to make recommendations.

Mr. Smith has been in the refrigeration field for many years and was formerly Chief of Refrigeration and Air Conditioning Section of the War Production Board at Washington. He was also previously associated with the Nash-Kelvinator Corporation in New York.

Could this be the answer to the "enamelers prayer"?

UNDER the heading "Note on Improved Glass Coating Process for Iron and Steel Products" we have the following from Wilfred Hanby, consulting mechanical and metallurgical engineer of 4 Rodway Road, London, S.W. 15:

Improved process

"By the improved process the base metal is given a special pickling and neutralizing treatment. The metal surface is then treated with a chemical solution which not only insures tighter bonding between base metal surface and glass coat, but also prevents under surface corrosion in the finished object. An important feature of the process is the low baking temperature employed to mature the coating, namely, 650 to 700° C., (1202 to 1292° F) thus enabling the very thinnest gauge material to be treated without distortion. All the usual colours can be incorporated in the glass frit.

"By the nature of the bonding operation employed, greater elasticity than usual is imparted to the glass coating, enabling the coated article to be bent without development of surface cracks. At the same time the surface is unscratchable. Coating gives full protection against corrosion and is unchangeable in colour and appearance in all climatic conditions, including marine atmospheres. It is resistant to acid and fruit juice stains except hydrofluoric acid, and is unaffected by alkalies. Coating is lead free.

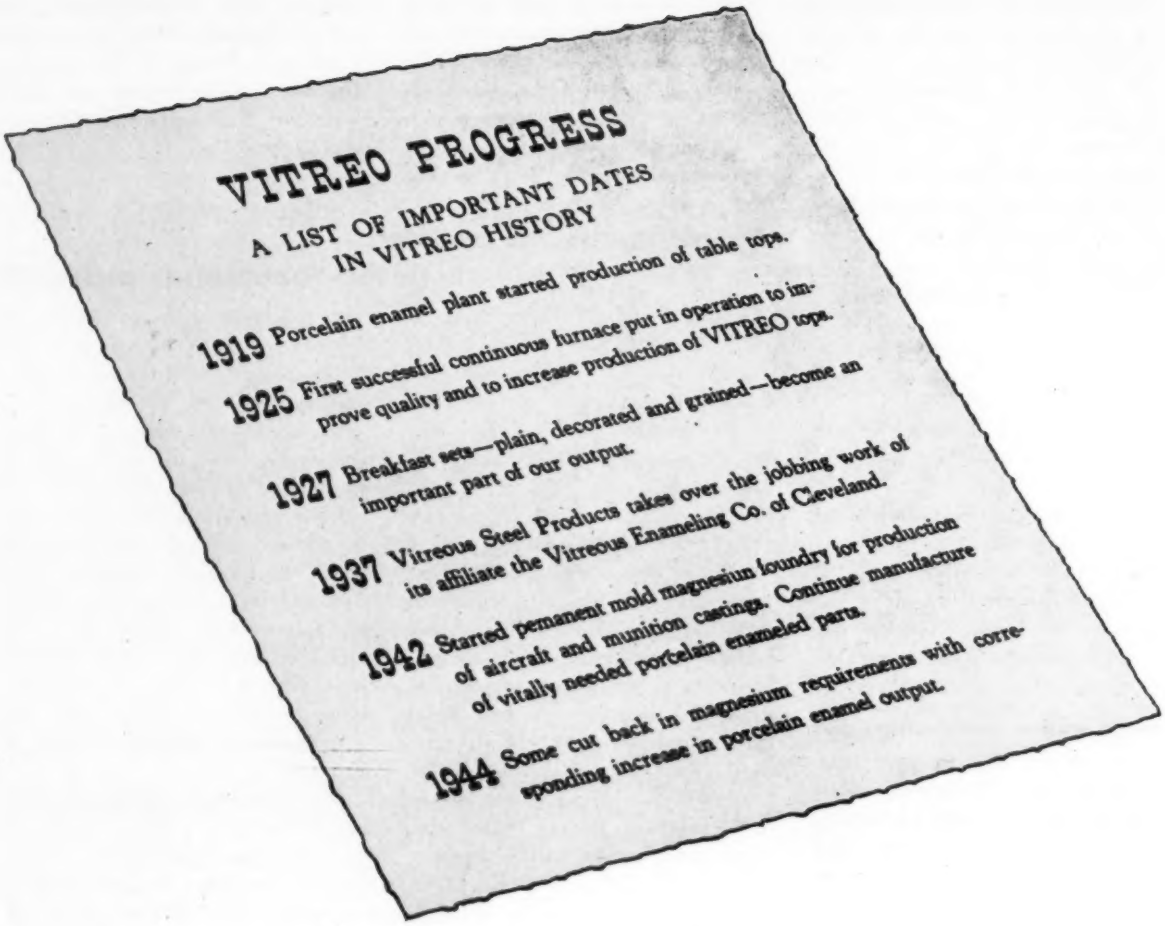
"The described preliminary surface treatment of the base metal can be used, giving equal bonding advantage and resistance to under surface corrosion, in the preparation of all work for enameling whatever frit formula is used."

Salesmen — take a bow!

The following is an excerpt from a recent address to the Materials Handling Machinery Manufacturers Conference at Westinghouse Electric and Manufacturing Company, East Pittsburgh, Pa. The address, by Andrew H. Phelps, Westinghouse vice president, was titled "Salesmen Can Provide Postwar Jobs."

"I believe that salesmanship will be more necessary than it has ever been in the past. Salesmanship will bring intelligence and a desire to the outermost parts of the earth to possess and use American equipment . . . I am speaking here of personal salesmanship where a man represents you to possible buyers. Several million of the men who are now in Service or in other kinds of jobs will enter selling. If these men can be retrained, reoriented and re-educated to become expert salesmen, each one of them can make jobs in plants and factories for from 50 to 100 persons who will manufacture the goods to be sold. There is a tremendous job to be done, for the men now selling have forgotten the art. The men returning from Service will have to be re-educated to the importance of selling. Many new salesmen will have been developed through expediting and follow work. Others should be recruited from the schools. These men will be young, enthusiastic, and a great tonic to the older men who have lost the art.

"I believe many of our job problems and the success of our future industrial development is in no small measure in the hands of the sales forces of America."


VITREO PROGRESS
A LIST OF IMPORTANT DATES
IN VITREO HISTORY
1919 Porcelain enamel plant started production of table tops.
1925 First successful continuous furnace put in operation to improve quality and to increase production of VITREO tops.
1927 Breakfast sets—plain, decorated and grained—become an important part of our output.
1937 Vitreous Steel Products takes over the jobbing work of its affiliate the Vitreous Enameling Co. of Cleveland.
1942 Started permanent mold magnesium foundry for production of aircraft and munition castings. Continue manufacture of vitally needed porcelain enameled parts.
1944 Some cut back in magnesium requirements with corresponding increase in porcelain enamel output.

YES, FOR 25 YEARS we have been learning to make better and better table tops, breakfast sets and many other porcelain enameled parts for leading manufacturers in varied industries.

During every one of those 25 years we have been improving our equipment — adding to it constantly until today we are operating one of the most modern shops in the industry.

It is your shop if you want us to form and enamel parts for you. Or if you prefer, we will enamel your stampings. Maybe we can help in design. Send us prints or samples for quotation or engineering advice.

★ ★ ★

VITREOUS STEEL PRODUCTS CO.

BOX 1791, CLEVELAND 5, OHIO *(Factory at Nappanee, Ind.)*

News from Washington

December distribution of chemicals for civilan use

The twenty-seventh in a series of monthly reports by the War Production Board made public the distribution of chemicals for civilian use in December under allocation orders of the Chemicals Bureau. A few of the chemicals listed follow:

Barium Chemicals — Barium carbonate and barium chloride: December allocations implemented through paragraph (f) provision of Order M-300 for civilian use. Supply easy and civilian requirements will be met.

Chrome Pigments — Allocations of Class B pigments which include chromium oxide green and zinc chromate, were made only to those essential military uses specifying the use of these pigments and where adequate substitutes were not available. Sufficient Class A pigments were available to most quota orders and exempt orders as defined in M-370, but no additional quantities were allowed for extra quota C Class A request. There is no anticipation that restrictions will be eased to any degree during the first quarter of 1945.

Sulphuric Acid — Allocations of sulfuric acid for delivery in the eleven Pacific Coast and Rocky Mountains States were allocated in entirety for the month of December.

Control of production and distribution of sulfuric acid is exercised in the following states: Washington, Oregon, California, Arizona, New Mexico, Colorado, Utah, Wyoming, Idaho, Montana, Nevada.

Revision in order reduces lead for civilian usage

(Order M-38)

Most civilian uses for lead will be restricted to the annual rate of 60 per cent of the 1944 level through a complete revision of Order M-38. This change reflects mounting military demands, declining production and a dwindling Government stockpile, according to officials of the Tin, Lead and Zinc Division of W.P.B.

Government officials reported that estimated 1945 requirements are 1,150,000 tons as compared with 970,000 tons of total supplies. Government reserves are less than one month's consumption and have been decreasing at a rate of from 15,000 tons to 25,000 tons per month during the last five months.

Restrictions and availability of lead are defined in the revised M-38 order under three new lists. List A outlines all prohibited uses (with certain minor exceptions). List B classifies the end uses for storage batteries, cable covering, tetraethyl and ammunition for military use only, for which lead will be 100 per cent available. Lead will also be unrestricted for solders, bearing metals, brass and bronze. Under List C, which embraces the greater portion of civilian uses, lead is restricted in the first quarter of 1945 to 30 per cent of the amount used in the first half of 1944, or at a 60 per cent annual rate.

It is anticipated that the newly imposed restrictions will effect a 15 per cent to 20 per cent reduction in over-all lead consumption from the 1944 level to bring it in line with expected supplies.

Quarterly production quota for cast iron bathtubs continued at 50,000 units

(Direction 5 to Order L-42)

Production of 50,000 cast iron bathtubs during the first quarter of 1945 has been authorized for limited distribution, the War Production Board announced. This rate of production is the same as that maintained during each quarter of 1944.

The job of producing the 50,000 tubs during the first quarter has been assigned to the same five manufacturers who produced the 50,000 tubs authorized for the fourth quarter of 1944. Each manufacturer has been directed to produce 10,000 tubs. The five producers are:

American Radiator & Standard Sanitary Corporation, Louisville, Ky.; Crane Company, Chattanooga, Tenn.; Eljer Company, Salem, Ohio; Kohler Company, Kohler, Wis.; and Richmond Radiator Company, Uniontown, Pa.

In assigning production quotas, WPB said that it would reduce authorized quotas if facilities and manpower are found to be required for more essential production programs.

Brass strip production may touch steel mills

As a result of the Army's expanded 1945 ammunition program, WPB has announced that all participating brass mills have been placed on the National Production Urgency List. In addition, arrangements are being made for the production of brass strip in Canadian mills, and copper clad steel will be used in the small arms program so as to relieve the tremendous strain on United States brass mills, WPB said.

The utilization of steel mill facilities for the production of ammunition brass strip is also being considered.

Production wanted is 354,000,000 pounds per month for 1945, which represents an increase over present operating schedules of approximately 50 per cent.

Dealer inventories lower on rationed stoves

Dealer inventories of most types of rationed stoves have declined substantially since rationing began, Max McCullough, OPA Deputy Administrator for Rationing, said in releasing figures on estimated stove inventories in dealers' and distributors' stocks.

Nation-wide rationing of all types of coal, wood, oil and gas cooking and heating stoves began on August 24, 1943. After a little more than a year — October 16, 1944 — coal and wood stoves were released from consumer rationing. All oil and gas cooking and heating stoves, however, remain on the rationed list.

Figures showing a year's stock picture at six-month intervals from October, 1943 to October, 1944 were given for coal and wood, oil and gas cooking and heating stoves. In addition, inventory figures as of Novem-

ber 1 for the types still rationed — oil and gas cooking and heating stoves— were furnished.

Oil cooking stoves — Demand is far ahead of wartime production.

Oil heating stoves — Over-all stocks have shown a steady downward trend, with only slight improvement during the summer months. Commenting on the general stock picture here, Mr. McCullough said: " . . . stocks will probably decline so sharply that in many localities very few oil heaters will be available in the stores."

ers burned out, would not be able to get a new one even though an oil heater might be the only kind of stove they could use in their homes or apartments."

Gas cooking stoves — A stock decline of 26,000 had occurred from October, 1943 to October, 1944 — dropping from 101,000 to 75,000. A decline continued through October, with stocks at 74,000 by November 1.

Old seasonal peaks no longer apply as the number of persons applying to ration boards for gas cooking stoves

Types of Stoves	Certificates issued during year ending Sept. 30, 1944	Trade Inventories (dealer and distributor stocks) Oct. 1, 1943	April 1, 1944	Oct. 1, 1944	Nov. 1, 1944
HEATING STOVES					
Coal-Wood*	843,075	507,000	423,000	487,000	
Oil	316,239	181,000	100,000	103,000	75,000
Gas	571,404	215,000	143,000	228,000	131,000
COOKING STOVES					
Coal-Wood*	411,951	71,000	98,000	128,000	
Oil	532,306	55,000	86,000	79,000	84,000
Gas	618,570	101,000	80,000	75,000	74,000

* Removed from consumer rationing October 16, 1944.

This table lists the number of certificates issued to consumers during the year ending September 30, 1944, and the estimated rationed stove inventories in the hands of the trade November 1, 1944 and at six-month intervals from October 1943 to October 1944.

It was further explained that shortages of labor for cutting firewood have caused many people who have been using wood burning stoves to apply to their local War Price and Rationing Boards for oil heaters.

"Unfortunately, neither the stocks of oil heating stoves nor supplies of kerosene and fuel oil are large enough to provide oil heaters for these people," Mr. McCullough said. "The stove panel members of the ration boards have to apportion what few stoves we have to the people who need them most. Consequently the eligibility requirements must remain high.

"One of the most difficult problems in determining how many certificates can be issued each month throughout the country is the necessity of reserving even a small supply for the people whose needs will develop suddenly during the winter. It would cause great hardship if we permitted all available stoves to be bought in the fall and early winter months. For example, people who moved and had no stove, or those whose old oil heat-

continued to increase through the month of October, when 77,615 certificates were issued.

Gas heaters—Both inventories and production are in considerably better shape than is the case with oil heaters. A slight gain in inventories of gas heating stoves was registered over the year from October, 1943 — 215,000 — to October, 1944 — 228,000.

However, demand has been very heavy. During October, 220,489 gas heating stove certificates were issued to consumers. The stock picture changed abruptly, with inventories estimated to have fallen to only 131,000 by November 1.

Appeals granted from L-23-c

Appeals granted during November, 1944, from restrictions of L-23-c, the domestic cooking appliances and heating stoves limitation order, have been reported by the War Production Board:

American Stove Company, St. Louis, Mo., was granted permission to use from inventory 25,000 zinc diecast chrome polished name plates for use on domestic gas ranges.

Anderson Stove Company, Anderson, Ind., was granted permission to produce 500 Aristocrat Model 302-5 cooking stoves (fireless cookers) for the fourth quarter of 1944 and 500 for the first quarter of 1945.

Potassium carbonate recommended for allocation

In view of anticipated increased military requirements for potassium carbonate, the Potassium Carbonate Industry Advisory Committee recommended at a recent meeting that the War Production Board allocate the chemical.

WPB officials said that inquiry would be made to learn if sources of potassium carbonate could be found in liberated areas which would ease export requirements.

Meetings of "fifty or more" involving transportation and hotel facilities must show "necessity."

Organizations planning to hold conventions, conferences, trade shows or group meetings after February 1 "will have to show how the war effort would suffer if the meetings were not held," according to Col. J. Monroe Johnson, Chairman of the War Committee on Conventions.

"The job of the committee," Colonel Johnson said, "is to achieve the objectives set forth by Justice Byrnes —to relieve overburdened transportation and hotel facilities and conserve desperately needed scarce materials and manpower. The hundreds of messages already received from organizations of diverse interests indicate that the nation is solidly back of our efforts. The committee has decided that the yardstick it will use to measure the essentiality of any meeting is how the winning of the two wars we are now fighting will be impeded if the meeting in question were held to an attendance of 50 or canceled outright."

Application forms will be available at all ODT regional and district offices, at most hotels, convention bureaus and from the national ODT office in Washington, D.C. All applications should be sent directly to Secretary R. H. Clare, Room 7321 Interstate Commerce Commission Bldg., Washington 25, D.C., where they will be reviewed by the committee.

Industrial Publications

P.E.I. publishes directory folder

The Porcelain Enamel Institute recently released a new directory of plants and suppliers represented by its membership. The booklet is designed for mailing from the Institute office to accompany answers to inquiries.

In addition to the company listings, two pages in the front of the booklet are used to outline and illustrate some of the principal advantages of porcelain enamel. The back cover lists the principal products for which the finish is normally used.

Refresher Course in Porcelain Enameling

Ferro Enamel Corporation, Cleveland, Ohio, announces the publication of a "Refresher Course in Porcelain Enameling." The contents cover design, metal preparation, application, plant troubles and process control.

The material originally appeared in "A Manual of Porcelain Enameling" which was published in 1937. The book was edited by J. E. Hansen, Service Director of Ferro, in collaboration with a group of well-known members of the porcelain enameling industry.

The "Refresher Course" is a digest of Mr. Hansen's book and, according to announcement, includes added material covering developments in porcelain enameling since 1937.

The new illustrated book is attractively bound and is 120 pages in length. The price is $1.00 per copy. Send check or money order to Ferro Enamel Corporation at 4150 East 56th Street, Cleveland 5, Ohio.

Sell research to America

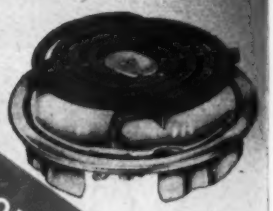
This is the theme of a bulletin entitled "Industrial Research and Development," published by Richard Rimbach, Consulting Engineer, Pittsburgh, Pa.

In the booklet Kettering's definition of research is quoted as "A means of finding out what you are going to

to Page 52 →

SELL T-K TODAY

Win Loyal Friends For the YEARS AHEAD



THERE ARE ONLY 2 SIZES OF T-K UNITS BUT THERE ARE 18 DIFFERENT INSTALLATION RINGS THAT MAKE THESE UNITS FIT ALL MAKES OF Electric Ranges

The dealer who sells quality during these trying times will have easy sailing when competition increases in the post war years. When the housewife is faced with the necessity of replacing a burned out or inefficient unit in her electric range, she relies on your technical knowledge. You know the uniformly high standard of T-K units — nickel-chromium resistance wire in perfect spiral centered in magnesium oxide. Rugged precision construction defies the extremes of heat and cold—rust—corrosion—food chemicals — steam — water and rough handling. Lift and turn principle makes cleaning easy.

* Units Raised to Cleaning Position

ALL ORDERS FOR T-K REPLACEMENT UNITS FILLED IMMEDIATELY

TUTTLE & KIFT INC.

GENERAL OFFICES AND PLANT

1825 NORTH MONITOR AVENUE · CHICAGO 39, ILLINOIS

Makers of Electric Heating and Cooking Devices

Frigidaire executive analyzes home "freezer" market

"Some of the rosy predictions of Home Freezer post-war volume should be taken with a grain of salt" is the opinion of P. M. Bratten, General Sales Manager of the Frigidaire Division, General Motors Corp.

Mr. Bratten points out that figures released in the press and periodicals indicated annual potential markets ranging all the way from two hundred thousand home freezer units to over two million units. "Certainly," he declared, "there must be something wrong with these widely divided estimates." Frigidaire's own surveys indicated a probable potential of between three hundred and fifty and four hundred thousand units per year in the post-war period and, if these figures are anywhere near accurate, there is sure to be some pretty hectic competition between the 132 manufacturers who have indicated that they will produce home freezers.

Price, of course, will be an important factor and although accurate figures can not be determined at this time, Mr. Bratten indicated that the price of Frigidaire's home freezer would be approximately the same as that of a good household refrigerator. " . . . Quality and performance are especially important here because of the substantial investment users have in products stored in their home freezers," said Mr. Bratten. "Home freezers must be especially well designed and well built to start with . . . if they are going to win the kind of public confidence that is necessary to assure a sound foundation."

In referring to the extent of the potential market, Mr. Bratten emphasized the difficulty of forecasting with any degree of accuracy how the demand for home freezers will be affected when food rationing is ended and the food distributing industry puts some of its own post-war plans into effect. Much will depend upon the availability of high grade frozen foods and the willingness of the housewife to learn and carry out techniques required to get satisfactory results when freezing is done in the home.

Another important factor will be the "planning conferences" that the average family will have before making purchases in the post-war world. Today, when so few items can be purchased, it is generally recognized by experienced executives that Mr. and Mrs. America are rather free in agreeing that they will buy many products when these are again available. However, when such products do become available, it is a pretty safe bet that the family will buy first what it needs and wants most.

How the home freezer will fare under such conditions is not definitely known. But it is known that automobiles, washing machines, refrigerators, furniture and perhaps the purchase of a new home, generally out rank home freezers in order of preference. Thus, it may be that many who cheerfully volunteer that they intend to buy a home freezer may defer that purchase for a considerable period—especially if they find that the household refrigerator they purchased first has a freezing compartment of substantial proportions.

Exclusive methods of preparation, patented equipment for separation and purification and petrographic and chemical controls assure you a trouble-free product.

Orefraction's new milling system produces a milled Zircon of exceedingly pure chemical analysis. Zircon Porcelain grinding media are used — eliminating all iron and free silica contamination.

Now available for Ceramic Colorants
OREFRACTION RUTILE (HIGH TiO_2 Content)

Trade Mark U. S. Pat. Office

Prompt Deliveries Anywhere!

Orefraction, Inc.
7505 MEADE STREET • PITTSBURGH 8, PENNA.
Telephone Churchill 3200. Jack Hunt, Mgr.

PASSING INSPECTION WITH A TOP RATING
is an old Toncan Iron Custom!

Reducing rejects at inspection points is a familiar trait of Toncan Enameling Iron. Here a panel of Toncan is passing inspection after forming in a jig, thus assuring that after enameling the edges will be square and assembly will be speeded.

This enameling sheet is made to take all working methods—from punching to difficult bends—and take them cleanly, uniformly and without setting up strains. It can be processed to "flow freely" into the deepest draws without wrinkling or cracking. It can stand up under repeated firings without warping or sagging. It has proved its ability to produce strong welds at top speed with a minimum of flash and grinding.

Toncan Enameling Iron is made to fit the most exacting production specifications—by men who are specialists in producing metals for ceramic work—by men who know what a metal must have to pass inspection under the most critical enameler's eye.

Check into your reject problem. Then check into the performance records of Toncan Enameling Iron. It may provide a cost-saving, product-improving answer to your problem.

REPUBLIC STEEL CORPORATION
GENERAL OFFICES • CLEVELAND 1, OHIO
Export Department: Chrysler Building, New York 17, New York

Republic
TONCAN ENAMELING IRON

The housewares show . . . *(Continued from Page 29)*

The major appliance display floor

One of the first displays to catch the eye was that of *Conlon Corporation* where their porcelain top ironer was shown. . . . "Youngstowns Kitchens" by *Mullins* had a large display showing model kitchens, Youngstown equipped. . . . "American Kitchens" were shown in a large display by *American Central Manufacturing.* Advertising in this display indicated post-war plans to include production of a garbage disposer, home freezer and automatic dishwasher. . . . *Siegler Enamel Range* showed porcelain enameled oil heater and "Royal Rose" gas ranges. . . . *Cribben & Sexton* displayed "Universal" gas ranges. . . . *Glenwood Range* were represented but showed no appliances. . . . *Renown Stove* displayed combination ranges. . . . Across the aisle *Standard Gas Equipment* was represented. . . . Next came *Anderson Stove Company* with "Sealed Heat" gas ranges. . . . "Time-tested" washers were displayed by *Voss Bros. Mfg. Co.* . . . Some of the other porcelain enameled appliances included *Simplex* ironers, *Thor* washers, *Ironette* ironers and *Automatic* washers . . . Some companies were represented both in this display and at the Furniture Mart. Among these were *Altorfer Bros.* and *Bendix.* . . . In the *Geo. D. Roper* display, in addition to enameled ranges, interesting lighted translucent drawings in color portrayed kitchens for the future. . . . In the *Globe American Corp.* exhibit an all-porcelain range with divided top was shown, all controls for which are mounted on the center of the back panel. . . . *A. J. Lindemann & Hoverson* were represented with kerosene, electric and gas ranges.

Does porcelain enamel need a new name?

(Continued from Page 32)

Porsel	*Durasten*
Porselmetal	*Metamel*
Porselmet	*Nu-Por*
Ceramicote	*Fus2steel*
Steelporcel	*Fused steel*
Porcelaine	*Fusen*
Porcelain	*Fuseporcel*
Porstelaine	*Fusecote*
Porcelsteel	*Pornam*
Fused Porcel	*Porcelized*
Porcelos	*Metalain*
Porclad	*Pormet*

This suggestion has come before the industry on a number of previous occasions and is certainly one that calls for careful consideration and thorough study before any definite action should be considered by the Porcelain Enamel Institute.

The committee consists of business men who are intimate with industry problems and it would seem, therefore, that the subject *will* get a thorough "going over" before definite recommendations are made.

The subject of name changes has always been controversial and *finish* will welcome letters expressing opinions of industry members — pro or con. Please indicate whether communications may be printed with or without signatures.

THE EDITOR

Chicago District Enamelers Club to meet Feb. 10

The program committee for the Chicago District Enamelers Club has announced the next meeting for the group. It will be held at the Graemere Hotel, Washington Blvd. at Homan Avenue, on Saturday, February 10.

The informal "get-together" starts at 12:00 noon, with luncheon at 1:00 P.M., followed by a business meeting and program.

The program

F. A. Petersen, Ceramics Department, University of Illinois, Urbana, will speak on *"The Value of Standard Tests to the Enameling Industry."*

G. H. McIntyre, Ferro Enamel Corporation, Cleveland, Ohio, will speak on *"Porcelain Enamels for the New Sheet Steels."* It is indicated that Mr. McIntyre will stress the responsibilities of the enameler in the securing of successful results with new enamels and new steels.

The committee also promises a bit of entertainment to brighten the luncheon meeting.

Transportation considered

Due to the request of ODT for curtailment of group meetings, a study was made by the officers as to how the scheduled meeting might affect transportation facilities. It was determined that local transportation is all that would be required for the most part, and that those who do come in from out of the city would represent only a fraction of the maximum established by ODT.

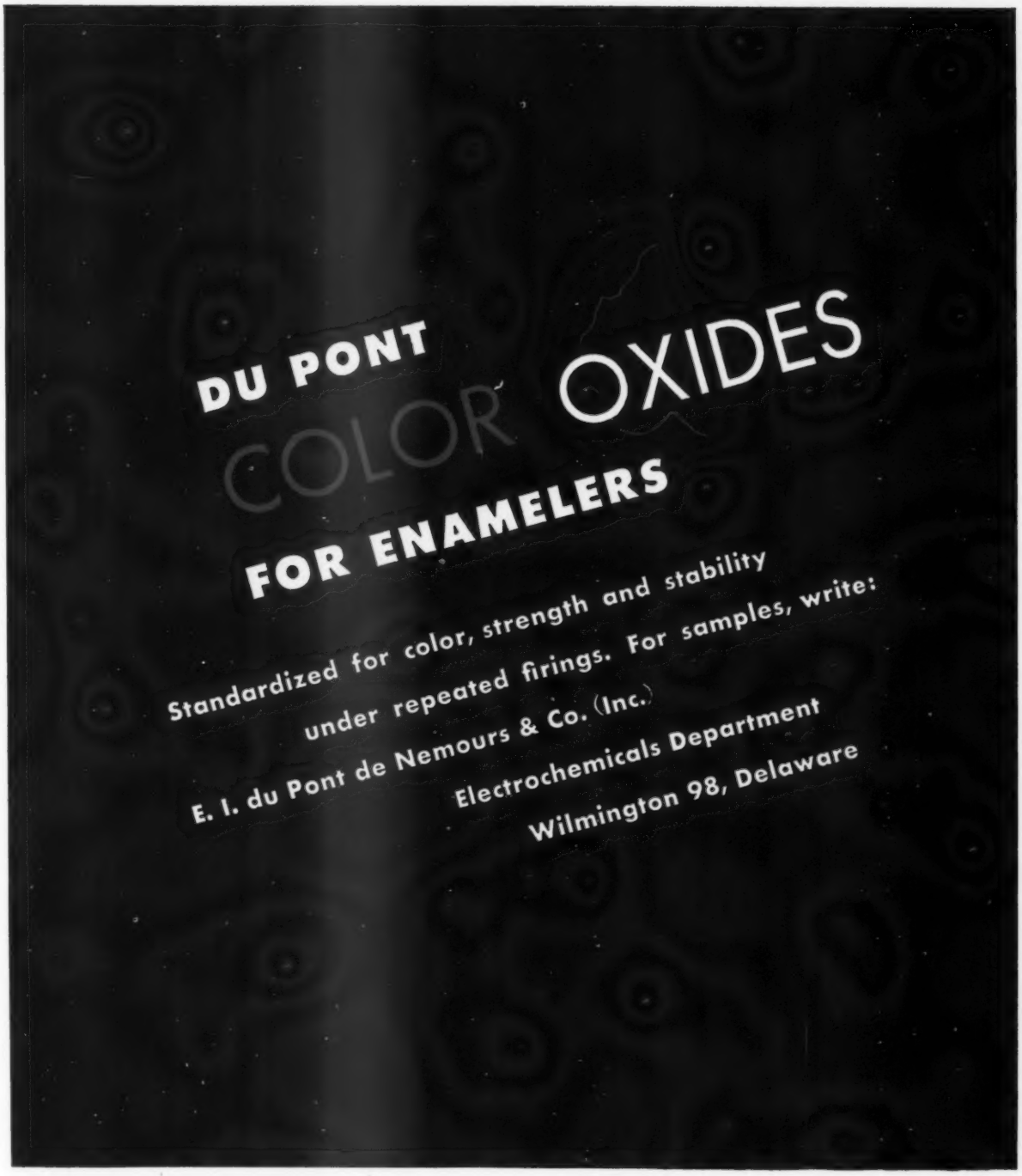
More Industry News

"5-11" Fire in Chicago enameling plant

A fire in the plant of Chicago Porcelain Enameling Company on the morning of Wednesday, January 17, was estimated by Chicago's fire commissioner to have caused $50,000 damage to the enameling company plant and an adjoining radio manufacturing plant. A 5-11 alarm brought more than fifty pieces of fire equipment to the scene to bring the blaze under control. Fortunately no one was working in the damaged plants at the time of the fire, so there were no casualties.

Pressed Metal Institute district meeting

The Cleveland District of the Pressed Metal Institute held a meeting recently and, in spite of inclement weather and bad traveling conditions, over forty-four members were present. Speaker for the evening was Dr. G. H. McIntyre, director of research, Ferro Enamel Corporation.


DU PONT
COLOR OXIDES
FOR ENAMELERS
Standardized for color, strength and stability
under repeated firings. For samples, write:
E. I. du Pont de Nemours & Co. (Inc.)
Electrochemicals Department
Wilmington 98, Delaware

DU PONT CERAMIC COLORS

DU PONT
REG. U. S. PAT. OFF.

BETTER THINGS FOR BETTER LIVING
...THROUGH CHEMISTRY

The how and why of sign advertising—Part XI
CONCLUSION

(Continued from Page 23)

of signs is recognized by the American Association of State Highway Officials in their *Manual on Uniform Traffic Control Devices for Streets and Highways.* At several points in their manual they emphasize the thought that "Markings poorly maintained have reduced authority." In other words, they have found that a traffic control sign that isn't in first class condition is likely to be disregarded. A sign that appears clear and bright is more likely to be obeyed than one that isn't.

The maintenance of a sign, many municipalities have found, can be largely solved by selecting the right material in the first place. In this connection, D. C. Rhodes, field engineer, the sign posting department of the Automobile Club of Southern California, said:

> "We find that up to the present time porcelain enamel signs are far superior to any other. They do not fade or discolor and are everlasting unless maliciously damaged by gunfire, rocks, etc. We have in place signs that were erected twenty-six and twenty-seven years ago which are in perfect condition."

Many of these signs were located along the seacoast where the salt sea air provided exceptionally rigorous tests and a merciless sun beat down on them. But they remained in good condition and entirely serviceable after more than a quarter-century of use.

Low maintenance cost for porcelain enameled signs is another factor considered carefully by city engineers when they develop their sign programs. The city of Cleveland, for example, which has used porcelain enameled signs for years, has discovered that a regular cleaning of this type of sign is the only maintenance step necessary. Costly repainting of the lettering is eliminated.

Where signs must be reflectorized, additional consideration must be given to the cost of maintenance. Either removing the reflectors or painting around them tends to make the maintenance cost exhorbitant. That is why the Baltimore and Ohio railroad, for example, has used porcelain enamel for reflectorized crossbuck signs. It is easy to keep such a sign in first-class condition.

Summary

A satisfactory street and highway sign program calls for:

1. Lettering sufficiently large and with sufficient contrast to be read from an automobile at a reasonable rate of speed for the street or highway on which the sign is to be posted.
2. Proper maintenance of such signs, which in turn depends on the material originally selected. If the signs are porcelain enameled, washing at intervals is all the maintenance that will be necessary.

Editor's Note:

The amount of correspondence that has come to your editor's desk concerning this series of articles by Ken M. Davee, on "The How and Why of Sign Advertising," would indicate strong interest among those in the industry whose primary interest is signs as well as among sign buyers of many of the larger manufacturers.

In answer to repeated requests concerning the author, we will restate, briefly, information published previously: When war was declared, the three members of DK&K organization all joined the services — Davee to the Navy, Koehnlein to the Tank Destroyers and Keating to the Signal Corps attached to the Air Corps. We hope to see them back on Michigan Blvd., Chicago, after the war.

The relation of test methods to quality standards for production

(Continued from Page 20)

not believe that this will greatly relieve the need for well-trained men. Those coming back from service are accustomed to Army or Navy life which, though very strenuous in certain areas, is a stand-by situation in large areas. Many of the returning service men are married and are, when released, entering industry instead of going to school with younger boys. Yes, all educational institutions are making plans for then, but the problem is going to be very complicated. It is doubtful if any of us will see the time when we actually catch up on this ten-year shortage.

In the past, the industrial enameler has been accustomed to employing a graduate from College and putting him into control work and forgetting about him. Ceramic Engineers do good jobs in control and often, as a result, have to wait years before advancement. In the future, the employer must accept his responsibility to continue the training which these men receive in College. They have come through a long line of eliminations and are far above average employees. Only one in three College engineering freshmen graduate—the others being dropped or discouraged. When you employ one of the graduates, take a personal interest and watch the man, train him, and he will develop rapidly to become a valuable employee and a leader. Some of you must remember your first job and the strange confused situation you entered, especially if you came from College and everyone knew it.

In the future, industry is going to develop these men and if the enamel industry does not, the best men will go elsewhere. Boys in College soon survey the graduates and the opportunities in industry. Let's develop a good reputation for the enameling industry and enjoy the opportunity to employ the best men from this group.

Adapted from an address by the author before a Cleveland, Ohio meeting of the Porcelain Enamel Institute.

Porcelain enameled utensils are made for fuel economy and cooler kitchens.

WOUNDED IN ACTION

-30 Years Ago

During the bombardment of Liege, Belgium, in the early part of World War I, this Ing-Rich sign used to advertise the Hotel DeSuede in that city was pock-marked by bullets — wounded in action.

However, the ravages of war and 30 years of time have not faded its bright lustre — more proof that Ing-Rich frits can take it.

Why not plan to specify Ing-Rich ground coat and cover coat frits for your postwar line of products, and gain the advantages offered by these frits which can take it.

ING-RICH
PORCELFRIT
"The Plant Tested Frit"

INGRAM-RICHARDSON MFG. CO.

OF INDIANA • INCORPORATED

FRANKFORT • INDIANA

A COMPLETE ENAMELING SERVICE